A Lecture
ON
THE TREATMENT OF EPITHELIOMA WITH ROENTGEN RAYS.

Delivered at the Third International Congress for Electrobiology and Medical Radiology held at Milan, Sept. 5th–9th, 1907,

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GENTLEMEN,—It is with the greatest satisfaction that I accept the very flattering invitation to speak here concerning the treatment of cancer of the skin with Roentgen rays. The subject is of great importance both from a pathological and anatomical and also from a therapeutical point of view, and its literature has already become extensive and international. It will be my endeavour to review the literature in chronological order and to dwell more particularly, but briefly, upon those works which contribute something new or original to our subject.

At the outset I may perhaps be allowed to say a few words respecting the non-operative treatment of epithelioma in general and the principal features of this treatment.[1] It is necessary to understand the definition of this group of tumours and the classification of its several forms. As is known, epitheliomata are tumours which originate from an atypical proliferation of the epidermis or its appendages. One group of these epithelial tumours is distinguished by the tendency to invade the surrounding tissues. The malignant character of these tumours is particularly evident by the spread of the growth by means of the blood and lymph channels. These are the real carcinomata. Such tumours which remain localised, and may therefore be, with certain limitations, called benign, are generally designated as epitheliomata. While the carcinomata are characterised by a quick growth, and while the lymph glands in the neighbourhood of the carcinomata are infiltrated even after a short time, a skin epithelioma can exist many years without materially changing its character and without in the least affecting the neighbouring lymph glands. It is true, however, that a slow and steady invasion of the surrounding tissues by the growth may be observed in spite of this exceedingly slow process. Each epithelioma varies considerably; frequently a case having a benign appearance in its initial stages may assume in the course of the illness a markedly malignant character. The difficulty we have to contend with lies in estimating the degree of malignancy and in determining the stage at which the treatment is to be commenced, and also in forming a correct prognosis. Generally speaking, the following new formations may be regarded as absolutely malignant: epitheliomata which are accompanied by glandular deposits and other evidences of metastasis; epitheliomata which themselves represent skin metastasis from a primary epithelioma situated in another region of the body; finally, tumours which are primarily skin epitheliomata but which have assumed the appearance and structure of the alveolar carcinomata. With respect to the estimation of malignancy at the beginning, it is known that epitheliomata which at first resemble Paget's disease or which commence as a xeroderma pigmentosum or which develop upon tissues affected by lupus or on nævi pigmentosi are apt to assume a malignant character. This remark also applies to tumours which are characterised by special etiology—e.g., chimney sweep's cancer, the epithelioma of workmen in petroleum refineries, &c. Epitheliomata, at least in their incipient stages, which originate in the skin already predisposed to it—as, for example, those which start at the base of a "xanthoma" or "keratoma senile" or "sebaceous" wart—may be regarded as malignant, as well as those which commence with the characteristic "pearl-knot" appearance without any other preceding local symptoms.

There are as many methods of treatment as there are varieties of epithelioma. It is obvious, however, that extirpation with the knife is the most radical method. But there are many cases in which the knife is contra-indicated. The cases treated by total extirpation produce in most instances unsatisfactory results *as regards their cosmetic appearance*. Moreover, extirpation is frequently more apparent than real. Operations are resorted to which must bring about material disfigurements, especially if they are often repeated, and we must observe, too, that the epitheliomata appear most frequently on the skin of the face. It is therefore intelligible that patients with epitheliomata on visible parts of the body are afraid of the knife and are especially grateful to the surgeon if he can propose a method which holds out the prospect of a cure without resorting to an operation and without the dreaded formation of a scar. The caustics, such as arsenic acid, which are recommended for the destruction of epithelial tissues are very numerous.

The indications for the employment of pharmaceutical therapeutics are, as I have pointed out, only limited to certain kinds of epitheliomata, which may be called "epitheliomata of dermatologists." Pearl-epithelioma generally, the epithelioma following verruca seborrhœica, corn, and keratoma senile are cases in which arsenic, locally applied, is successful, and where it is decidedly to be preferred to an operation with the knife. The results are really quite as safe; moreover, this method has the advantage that it leaves behind scarcely visible scars and therefore causes no disfigurement.

Together with the surgical and chemical method of treatment of the epitheliomata must be mentioned *physical therapeutics*. While the effect of the Roentgen rays on lupus vulgaris is now beyond all doubt and these therapeutics introduced by me are generally accepted, the healing effect of the rays upon the epitheliomata is not yet universally acknowledged. If I may be permitted to give my own experience in this direction, I can only emphasise the fact that I am more than ever convinced of the favourable effect of the rays upon lupus and epithelioma; similar results are reported from a number of eminent colleagues.

On the perusal of the literature it is astonishing to find that the term "epithelioma" is not sufficiently defined; large ulcerating skin carcinomata are erroneously classified by certain authors with the epitheliomata, histological details are often wanting, and, finally, the details of the treatment are not always accurately given. All this materially interferes with the drawing up of statistics and a table such as I have attempted to draw up. My data can, therefore, only claim a relative value, as only a portion of the epitheliomata treated with Roentgen rays are included, and consequently an opinion in regard to a cure cannot be expressed in all the cases. Even though completeness could not be attained, the fact that the authors from all countries who report upon the Roentgen treatment of the epitheliomata are so eminent, is in itself a guarantee that the conclusions to be drawn, in spite of defective statistics, may be accepted as valid and are not merely the expression of a personal conviction.

To quote the literature, as far as possible, in chronological order. The first communication on the treatment of cancer comes from Gocht.[2] The subject was a woman, 54 years of age, who was admitted for treatment with an ulcerated incurable cancer of the breast on the right side. On account of the pain and to ease her a daily application of rays was given; the patient felt comparatively well and pain is said to have disappeared almost entirely. On the seventh day the temperature rose suddenly and erysipelas developed and spread rapidly over the back and breast and the whole of the right arm. According to our present-day conception this might perhaps be taken as "Roentgen dermatitis." In the next few days profuse bleeding occurred from the ulcerated carcinoma and on the seventh day after her admission she died from cachexia and sepsis. A second patient, 46 years of age, suffered from a recurrent cancer of the breast and had already been operated upon several times, the last time in 1896. As in the former case the pain quickly abated, to return again when the treatment was discontinued. Since that time numerous cases of the Roentgen ray treatment of cancer have been published which cannot be entered into here.

The history of Roentgen ray therapeutics on epitheliomata is brief, but it abounds in names and facts. M. Möller[3] brought forward the first case before the Society of Swedish Physicians in Stockholm in December, 1899, and in the same

[1] Schiff: Non-operative Treatment of Epithelioma, Vienna Medical Press, No. 14, 1905.

[2] Progress in Röntgen Ray Treatment, vol. i., No. 50.

[3] Bibliotheca Medica, vol. ii., No. 8.

session a case which had been treated by Stenbeck. Stenbeck[4] published two cases in January, 1900, and in conjunction with Bollaan five cases. In January, 1900, Sequeira[5] demonstrated four cases of rodent ulcer with most successful results before the Röntgen Society in London. In the "Bibliotheca Medica," Division D., II., Book 8, "The Influence of Light upon the Skin in its Healthy and Morbid State," by Dr. Magnus Möller, a brief report is given of the first epithelioma which was treated by Roentgen rays. The following are abbreviated notes of the case.

I. A man, 72 years of age, had for 14 years had a cancerous ulcer on the left cheek, which was spreading continuously in all directions and finally reached the lower eyelid, which became involved. There was no pain and no medical treatment was adopted. The left cheek was in June, 1899, replaced by a large egg-shaped cavity which extended from the rima palpebrarum four centimetres downwards as far as the level of the left nostril and in breadth extended from the bridge of the nose to the cheekbone. The uneven surface consisted partly of a shiny, atrophic, slightly moveable skin here and there covered with crusts under which were flat, easily bleeding ulcerations. A narrow furrow surrounded the whole of the affected part outside of which were found here and there indications of a somewhat raised wall, the colour of the surrounding healthy skin. The lower eyelid had become completely lost and the ulcerated surface merged into the swollen "conjunctiva" without any definite line of demarcation. There were no swellings of lymph glands and the general state of health was good. The diagnosis, "epithelioma," was confirmed by microscopic examination. The treatment began on June 28th, 1899. Even after 15 sittings a change was noticeable. The crusts were loosened and the ulcerations began to be covered with a thin epidermis. Without going into the details of the treatment it may be said that the same was continued with shorter or longer intervals until the beginning of February, 1900, and in all about a hundred applications of the rays were made. The large central part of the efflorescence healed fairly quickly, even before the first reaction had set in. But the edge itself and the wall-like elevation stubbornly remained. These, however, gave way gradually, but only after a fairly intense reaction had been brought about. At the end of the treatment the place of transition from the healed part of the skin to the conjunctiva close to the external angle of the eye assumed a suspicious appearance. A further treatment of this spot did not appear desirable for several reasons. The patient presented himself three months later, in May, 1900. The healed surface was still free from recurrence. On the suspicious spot above mentioned at its point of junction with the conjunctiva the new formation had developed further, and had penetrated in depth, for which reason the patient had been sent to the hospital for surgical treatment. After the removal of the affected part and a subsequent plastic operation, the result was eminently satisfactory. True, the upper eyelid is somewhat drawn down at the outer angle through the contraction of the scar, but otherwise the cheek has a surprisingly good appearance.

Stenbeck[6] in Stockholm was one of the first to treat cancroid with Roentgen rays. The first case was one of a "deep-reaching epithelioma," and the other a "superficial one." In both the results were very good. Stenbeck and Bollaan[7] published five cases of cancroid of the face, which healed very well, and with the formation of an ideal scar. Sjögren[8] in Stockholm demonstrated a case of epithelioma of the face before the Society of Swedish Physicians in 1900, which was cured under Roentgen treatment: "It may be taken for granted that this method of treatment of cancer of the skin will in the future hold its place in therapeutics, as being especially suitable for certain cases." At the meeting of naturalists in Hamburg in 1901 the same author[9] reported upon his first favourable results with epithelioma and rodent ulcer.

Sjögren and Sederholm[10] report upon five cases of epithelioma. They conclude by saying: "To judge by the cases treated, Roentgen rays exercise a decidedly favourable influence upon certain forms of cancer of the skin, and especially upon the so-called rodent ulcer." In three out of the five cases a striking improvement set in without reaction; in Case 1 it was deemed necessary later to provoke a reaction by a more vigorous treatment, which had also been the intention in two cases from the beginning. It appears that where the treatment brings about a reaction with subsequent necrosis and exfoliation of the growth a cure can be brought about. It is more difficult to understand, however, how the x rays can exercise this direct healing influence in those cases where no reaction is brought about. With regard to the final result of this method of treatment of cancer of the skin, it is hardly possible to draw any conclusion, even moderately definite, from the cases just cited. It would perhaps be rash even to admit that definite healing in any of these cases had taken place. If it is proved in the future that this treatment properly carried out is really a safeguard against relapses, so we may also find that it can advantageously be used in those cases where the process extends over large surfaces and which are not adapted for surgical treatment without the production of disfiguring scars. There are besides, as is known, always a number of patients who are willing to undergo any treatment, no matter how prolonged and troublesome, provided no surgical operation has to be undergone. In such cases it is worth while to bear in mind the method in question. In 1897 Finsen treated a case of epithelioma in his Light Institute and since then the good result obtained has proved lasting. Further reports upon 17 cases of superficial cancer in the skin treated in the same manner, eight of which according to all appearance were cured completely, were given by him later ("Det Danske Dermatologiske Selskabs Forhandlinger," 1900).

Sequeira[11] reported upon 12 cases of rodent ulcer and "mal perforant." Five cases were cured and the others remained in the same condition.

I demonstrated at the meeting of the Royal Society of Physicians in Vienna on Nov. 8th, 1901, a man, 68 years of age, with epithelioma of the face. The patient underwent an operation in a Vienna hospital in 1900 on account of this epithelioma which was situated in the neighbourhood of the angle of the left eye. There was recurrence. Subsequent grafting of the ulcer by Thiersch's method was performed. At the end of September there was a further recurrence. I gave the patient a daily application of rays lasting ten minutes. After the fifteenth sitting a slight reaction set in. After eight more sittings the new growth was replaced by a scar, perfectly smooth, level, and of normal colour; the patient was cured. A second case was that of an unmarried woman with a rodent ulcer on the bridge of the nose and on the edge of the right ala nasi. The patient was exposed to Roentgen treatment 35 times; the ulcers gradually healed without any reaction and became covered with skin in a normal manner. She was cured. Further, on Feb. 21st, 1902, I showed a healed epithelioma on the left ala nasi in a woman, 101 years of age; and on May 14th a case of epithelioma of the zygomatic arch which had been cured after 73 sittings. On May 30th, 1902, I was able to demonstrate[12] before the Society of Physicians of Vienna a cured epithelioma which was situated at the root of the nose and had been of the size of a sixpenny-piece. It had existed for 22 years and had been treated by the most various methods without success. I gave 33 applications of rays. The length of time for the treatment in this case was due to the fact that in consequence of the locality of the affection a thorough protection of the healthy skin was not possible and therefore a part of it became superficially excoriated by the application of the rays and this required further treatment. The further course of this case is particularly noteworthy. After one and a half years the smooth scar which was found in the place of the former epithelioma grew red and although the application of Roentgen rays was again resumed immediately it no longer met with any success. On the contrary, very soon a loss of substance occurred which increased continuously. I discontinued the application of the rays and had recourse to the most varied caustics—among others, hydrogen peroxide and Mibelli's solution of arsenic—but without success. The growth continued to enlarge and in the surrounding part were formed, separated by healthy skin, two new foci, one of which was in dangerous proximity to the left lower eyelid. As the growth continued to extend I was obliged to induce the patient to submit to a radical surgical operation. This was performed by Principal Dr. Schnitzler in such a manner that the whole of the affected part was extirpated and covered with pieces of skin. The case is still under observation.

Johnson and Merrill[13] report the following cases: (*a*) histologically proved epithelioma of the face, cure after 50 applications of rays; (*b*) epithelium on the nose, cure; (*c*) ulcerated lip-cancroid, abatement of suppuration only;

[4] Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie, January, 1900.

[5] Clf Sjören.

[6] Deux Cas de Cancroideguéris par les Rayons de Röntgen. Congrès International d'Électrologie et de Radiologie Médicale, July 30th, 1900. Reference to Progress in Roentgen Ray Treatment, iv., 2, 190].

[7] Traitement du Cancer de la Peau, Archives d'Électricité Médicale, July 15th, 1901.

[8] Concerning Roentgen Treatment of Sarcoma. Progress in Roentgen Ray Treatment, 3, 4, 1905.

[9] Roentgen Therapeutics with Lupus Erythematodes, Cancroid and Ulcus Rodens. Progress in Roentgen Ray Treatment, v., 4, 1901.

[10] Contributions on the Therapeutical Application of X Rays. Progress in Roentgen Ray Treatment, iv., 4, 1901.

[11] Treatment, March, 1901.

[12] Wiener Klinische Wochenschrift, November, 1901, and February, June, 1902.

[13] Treatment of Carcinoma, &c., Philadelphia Medical Journal, No. 8, 1900.

and (*d*) two epitheliomata on the nose, cure. Chamberlain[14] has treated 13 cases of cancer, of which some were epitheliomata. The length of time of treatment varied. The rays work specifically upon carcinomatous tissues and bring the process to a cure as long as the regional glands are not affected, and even in incurable cases they alleviate pain and remove active proliferations. Cesar Comas y Llaberia and Augustin Prio y Llaberia[15] discuss the following cases: cancerous ulcer on the skin of the left cheek of a widow, 63 years of age, histological examination confirmed the diagnosis, cure after 16 sittings; and epithelioma of the eyelid in a man, 58 years of age, very material improvement after ten applications of rays.

Mikulicz and Fittig[16] have obtained very favourable results in three cases of rodent ulcer of the face through judicious application of rays and are convinced that they have brought about a cure. One can, therefore, obviously cure a cancer by either a strong or weak application of rays. But whereas, according to other authors, it appears to be a question of a difference of degree, according to Mikulicz and Fittig a principal difference lies in the effect produced. Beyond the point at which the changes are produced on the vessels a necrosis eventually destroys the carcinoma and everything else; before this point is reached, however, a separate degeneration of its epithelial elements takes place, which commences the process. There are, therefore, two theories as to the action of the rays, but the second one only seems to me the more feasible, as it is based upon the electrical effect of the Roentgen rays upon the epithelial cells, while the first is void of any specific action.

Holzknecht[17] reported at the Carlsbad Assembly of Naturalists that the Roentgen therapeutics of rodent ulcer might now be considered as being "free from objection." About a hundred cases were reported, in some of which the diagnosis had been confirmed by the microscope, and in which there had been no recurrence for two years. Deeply penetrating epitheliomata, which are not radically cured by Roentgen therapeutics, show an improvement, inasmuch as the discharge of ichorous pus disappears even after a very weak reaction.

Sequeira[18] has cured 34 out of 80 cases of rodent ulcer. The others were still under treatment at the time of publication. In spite of these favourable results he recommends excision for suitable cases. In the discussion Williams, Taylor, and Walther laid stress on the good results which they had seen from Roentgen rays. Strebel[19] perfectly cured three cases of "cancroid of the skin." Frieben[20] demonstrated on Oct. 21st, 1902, a cancroid on the back of the right hand which had developed after a prolonged application of Roentgen rays. The same ulcer had been seen by Hahn in January, 1902. In March, 1902, Sick diagnosed this case as one of cancroid which was confirmed histologically. Disarticulation of the arm was performed at the shoulder-joint. Lassar[21] took this case to be a carcinoma which had originated in a xeroderma pigmentosum. I will pass over similar observations by M. O. Wyss, Fittig, Riehl, Baermann, Cornil, Gaucher, Linser, and others, as the subject of Roentgen ulcer and of Roentgen carcinoma produced by this means would lead us too far away from our subject.

At a meeting of naturalists at Carlsbad, Freund[22] showed an apparatus which he had invented, by means of which it is possible to apply the Roentgen rays in the oral cavity. For example: to treat a swelling of the tonsils it is only necessary to introduce a lead tube of corresponding dimensions into the mouth and to place it in contact with the tumour. Pusey[23] saw very good results in the case of epitheliomata. The advantages of the process are: (1) painlessness; (2) the affected tissue only is attacked; (3) the scar is very fine; (4) in incurable cases the further progress is arrested; and (5) pain is assuaged.

In the case of carcinoma of the skin it is a question whether radio-therapeutics should not be commenced *ab initio*. Hall Edwards[24] cured an epithelioma of the left eyelid which had grown in spite of surgical treatment, had ulcerated, and had finally reached as far as the left naso-labial furrow. Comas and Prio[25] cured in 16 sittings an epithelioma on the face of a woman, 63 years of age, which had grown in spite of surgical treatment and had reached the size of a shilling. Hall Edwards[26] cured an old man, 63 years of age, of an epithelioma of the lower lip in 37 sittings. Skinner[27] deals chiefly with deep-seated cancers. In cases fit for operation the result is said to be improved by the application of rays, partly before and partly after the operation. Pain is mitigated to an extraordinary degree. Williams[28] reports very good results with epithelioma. Perthes[29] saw in three cases of skin carcinoma of the face the rodent ulcer becoming converted into a granulating surface with cicatrisation. In the discussion which followed Lassar demonstrated a cured cancroid of the skin of the face. On account of the large amount of material the publication by Bashford[30] is particularly valuable. In his list he cites 400 cases of carcinoma. Epithelioma relapsed in from 20 to 40 per cent. of the cases, and complete cure took place in 141 out of 216 cases—i.e., 65 per cent. He prefers, however, to offer no definite opinion on the value of these therapeutics. Turner[31] describes good and partly brilliant results with epithelioma but none with carcinoma. He applies rays daily during the first week and every other day during the second; he then repeats the cycle after a fortnight's pause. Ellis[32] observed in two skin cancers the following microscopical appearances. Varying degrees of necrosis of the parenchyma and of the "stroma," increase of the elastic tissue, homogeneous deposits into the blood-vessels even to occlusion; endarteritis obliterans with necrosis; the latter is said to appear at the same time as the first, but not consecutively. Holding[33] has applied the rays to two epitheliomata of the face, which had relapsed after operation, with good results. This author has collected 148 cases of cancer treated with Roentgen rays, among which there are many epitheliomata and rodent ulcer. He is sceptical, however, as to the justification of the term "cured completely." Rudis-Jicinsky[34] obtained no success with a relapsing carcinoma of the lower lip. Grön[35] once obtained cicatrisation in one case of rodent ulcer and in another temporary improvement. At the discussion on Stelwagon's lecture Hardway[36] admits the favourable influence upon rodent ulcer, while Montgomery[37] says he has not seen a single bad result in more than a hundred cases of epithelioma of the face. Bowen[38] has cured 27 out of 55 epitheliomata, 19 patients are still under treatment, and nine have been failures. Hahn[39] reports upon 11 cases of malignant growths, amongst them rodent ulcer of the head, forehead, and right side of the head. "In the first case we had no success at all." The second case was cured in 12 sittings and recurred after three months. The third case, which was operated upon several times, showed visible improvement, although no cure took place. Later, the important conclusions arrived at by this author will be communicated. Harrison and Wills[40] reported 12 cases of rodent ulcer treated with Roentgen rays, which in

[14] Treatment of Cancer, Journal of Electro-Therapeutics of New York, May, 1901.
[15] Progress in Roentgen Ray Treatment, vol. i., 1901.
[16] Contributions to Clinical Surgery, p. 37, 1902.
[17] Progress in Roentgen Ray Treatment, vol. vi., p. 2, 1902.
[18] Seventieth meeting of the British Medical Association, Manchester, July, 1902. Reference in Progress in the Roentgen Ray Treatment, vi., 2, 1902.
[19] Röntgen Rays Therapeutics. Progress in the Roentgen Ray Treatment, vi., 2, 1902.
[20] Lecture to the Medical Association, Hamburg. Reference in Progress in the Roentgen Ray Department, vi., 2, 1902.
[21] Reference in Progress in the Roentgen Ray Department, vii., 2, 1904.
[22] Reference in Progress in the Roentgen Ray Treatment, vi., 2, 1902.
[23] Report of Cases, &c., Journal of the American Medical Association, March, 1902.
[24] A Case of Rodent Ulcer, &c., Archives of the Röntgen Rays, December, 1902.
[25] Revista de Medicina y Cirurgia, September, 1902.
[26] The Röntgen Rays, &c., Archives of the Röntgen Rays, December, 1902.
[27] X Light in Therapeutics, Archives of the Röntgen Rays, Dec. 27th, 1902.
[28] The Röntgen Rays in Surgery and Medicine, New York, 1902.
[29] Respecting the Influence of Roentgen Rays upon Epithelial Tissues, &c., Thirty-second Congress of the German Society for Surgery, 1903, June 3rd to 6th. Reference in Progress in the Roentgen Ray Treatment, vii., 1, 1903.
[30] Publication of the English Committee for the Investigation of Cancer. Reference in Progress in the Roentgen Ray Treatment, vii., 1., 1903.
[31] Treatment of Carcinoma, &c., New York Medical Record, Jan. 7th, 1903.
[32] The Pathology of the Tissue Changes, &c., American Journal of the Medical Sciences, January, 1903.
[33] Albany Medical Annals, February, 1903.
[34] New York Medical Journal, February, 1903.
[35] Reference in Progress in the Roentgen Ray Treatment, vii., 2, 1903.
[36] Vide Stelwagon. Reference in Progress in the Roentgen Ray Treatment, vii., 2, 1903.
[37] Ibid. [38] Ibid.
[39] Progress in the Roentgen Ray Treatment, vii., 2, 1903.
[40] Remarks on the Light Treatment of Lupus and Rodent Ulcer, Bristol Medico-Chirurgical Journal, March, 1903.

most instances showed considerable improvement. Coley[41] saw 75 cases of malignant tumour from February, 1902, to January, 1903; among them were 15 epitheliomata of the head, face, tongue, and upper jaw, all of which yielded good results on treatment. Fittig[42] published 37 cases of carcinoma which were treated with Roentgen rays, 18 of which were skin carcinomata. He observed that the small-celled skin carcinoma, which is not becoming horny, or only slightly so, as long as it still possesses the properties of rodent ulcer, reacts far more favourably to the Roentgen rays than that which is horny, which contains large cells and which extends deeply. Of the skin carcinomata three may be considered as completely cured; while with another three recurrence took place; there are also four failures to be noted. In the remaining cases no definite opinion could be formed owing to the shortness of time. He considers Roentgen therapeutics to be of equal value with operative measures.

Gamlen[43] treated a tongue epithelioma in a syphilitic patient. At first there was visible improvement; then enlargement of the growth, then cicatrisation, and finally a relapse with extensive swelling of glands. Morris and Dore[44] saw favourable results in 12 out of 27 cases of rodent ulcer. Thurstan Holland[45] noticed good results with epitheliomata, none with inoperable carcinoma. At the meeting of surgeons in Berlin on Jan. 12th, 1903, Fittig[46] demonstrated two cured epitheliomata of the nose, one on the eyelids, and one on the ear. Diagnosis histologically confirmed, success brilliant, duration of treatment 14 days to two months; soft tubes used, not too old. Perthes[47] has cured rodent ulcer and other carcinomata, also recurrent growths after operations.

Grubbe[48] has treated 103 cases of epithelioma with highly exhausted tubes which may be tabulated as follows:—

Condition.	Cases treated.	Good results
Epithelioma of the eye	8	5
,, ,, tongue	13	7
,, ,, vagina	5	5
,, ,, pharynx	20	6
,, ,, uterus	2	2
,, ,, nose and cheek	22	10
,, ,, lips	21	10
,, ,, other parts of body	12	5

Lester[49] expresses the opinion that cancerous tissues in the beginning of their growth are certainly destroyed by Roentgen rays. Exner[50] has treated three flat skin carcinomata with good results. Ichorous ulcers became clean, in one case local "apparent cure." Van Allen[51] speaks of the cure of various cancers. Daniel[52] saw improvement in seven out of 25 cases of epithelioma, two cases of death during treatment, and 12 failures; in three cases the treatment was interrupted. Stelwagon[53] declares Roentgen rays to be a sure and effective remedy in epithelioma. Pusey[54] saw an enormously large skin cancer with cancerous ulcers in the neck heal up completely. Burns[55] has cured 27 out of 55 epitheliomata of the skin; in nine cases there has been improvement, and 19 patients are still under treatment with seemingly favourable results. Jaime R. Costa[56] reports upon four cases of extensive face epithelioma with good results. Hall Edwards[57] saw a brilliant success in a case of epithelioma on the nose. Iodine was used internally besides the Roentgen rays; a preceding iodine treatment without Roentgen rays was without any result whatever. At the meeting of naturalists in Kassel in 1903 Rieder[58] discussed the results of light therapeutics up to the present time. He said: "Cancer of the skin also and malignant new formations are amenable to treatment by light- and radio-therapeutics." Townsend[59] discusses a case of rodent ulcer in the face of a woman, 72 years of age, which was cured in 44 sittings. Bruns[60] declares that crancoids on the skin offer the best prospect for the application of Roentgen rays. Pfahler[61] cured a skin cancer on the bridge of the nose in 20 sittings with good cosmetic results, and from this and similar cases he drew the conclusions that "Roentgen rays influence certain cases of superficial or deeply seated carcinoma." The cosmetic result of the application of rays in cases of skin carcinoma is the best of all methods of treatment. Bevan[62] recommends the rays for skin carcinoma, which, firstly, are not accessible to the knife; secondly, as an after treatment for patients upon whom an operation has been performed; thirdly, for inoperable malignant ulcers. Lester[63] completely cured a case of rodent ulcer on the upper eyelid which had invaded the cartilage. Schmidt[64] shows that Roentgen rays chiefly attack epithelial growths, hence their effect on rodent ulcer and on the skin. Hahn[65] saw in two cases of rodent ulcer healing taking place at one spot and extension at another. Reymond and Chanoy[66] mention the case of an extensively ulcerating epithelioma of the vulva which quickly improved under Roentgen rays. They effected a complete cure on the continuation of the treatment. Berdez[67] saw favourable results in three cases of epithelioma of the face. Perthes[68] saw 12 complete cures out of 13 cases of skin cancroids in Leipzig. One was a case of carcinoma of the lip which was treated with only a single application of the rays for a period of 25 minutes.

Merk[69] demonstrated two cases of cured epithelioma of the extremity of the nose. R. B. Wild[70] cured 13 out of 22 cases of rodent ulcer, two remaining unimproved and three patients died. Of those cured, three relapsed within 14 months; two of these were cured through further application of the rays. On ten inoperable epitheliomata, situated in different places, the rays exercised no influence. Albers-Schönberg,[71] at the medical meeting in Hamburg on Nov. 1st, 1904, brought forward a case of extensive cancroid of the nose, which was cured completely and "with excellent cosmetic results." Scholtz[72] in Königsberg, who has been busily engaged in the Roentgen ray treatment of epithelioma, comes to the following conclusion: "In the case of superficial cancroids of the skin, the question of Roentgen treatment, in view of the good results attained by it, not only has to be considered when an operation ..... is excluded, but in certain cases the alternative has to be given equal consideration to that of an operation. Roentgen treatment competes with operative measures, especially in those cases where surgical interference would be difficult, or a bad cosmetic result would be likely to follow, such as in the face." Lesser[73] has treated cancroids of the lip, angle of the eye, forehead, nose, angle of the mouth, and anus with obvious

[41] The Present Position of the X Ray Treatment in Malignant Tumours, Archives of the Röntgen Ray, March 21st, 1903.
[42] Contributions to Clinical Surgery, vol. xlii., No. 2.
[43] X Ray Treatment, &c., Archives of the Röntgen Rays, March, 1903.
[44] The Light Treatment, &c., The Practitioner, April, 1903.
[45] X Rays, &c., Archives of the Röntgen Ray, April, 1903.
[46] Cases Treated with Röntgen Rays. Reference in Progress in the Roentgen Ray Treatment, vi., 5, 1903.
[47] Respecting the Influence of Röntgen Rays, &c., Lecture at the Congress of German Surgeons, 1903. Reference in Progress in the Roentgen Ray Treatment, vi. 5, 1903.
[48] Treatment of Epithelioma, &c., American Roentgen Society, December, 1902, reference in Progress in the Roentgen Ray Treatment, vi., 6, 1903.
[49] American Medicine, vol. vi., p. 22. 1903.
[50] Roentgen Treatment, &c., Wiener Klinische Wochenschrift, No. 23, 1903.
[51] The Cure of Cancer by the Use of X Rays, Boston Medical and Surgical Journal, June 25th, 1903.
[52] The X Ray as a Therepeutic Agent, Advanced Therapeutics, August, 1903.
[53] Some Observations on the Use of Roentgen Rays, Boston Medical and Surgic... Journal, Sept. 17th, 1903.
[54] Hospital, Oct. 10th, 1903.
[55] Some Observations, &c., Boston Medical and Surgical Journal, Oct. 29th, 1903.
[56] Treatment of Epithelium with X Ray, Revista de la Sociedad Medica Argentina, vol. xi., 1903.
[57] A Case of Epithelioma of the Nose, &c. Archives of the Roentgen Ray, November, 1903.
[58] Agenda of the Meeting of German Naturalists and Physicians, Leipzig, Vogel, 1904.
[59] Cork Medical and Surgical Society, 1903.
[60] Treatment of Cancer with Roentgen Rays. Modern Therapeutics, No. 1, 1904.
[61] Carcinoma and Tuberculosis, Treatment of, &c., Journal of the American Medical Association, Jan. 2nd, 1904.
[62] The X Ray, &c., Journal of the American Medical Association, Jan. 2nd, 1904.
[63] Some Results, &c, Brooklyn Medical Journal, January, 1904.
[64] Development of Light Therapeutics, &c., Periodical for Medical Instruction. No. 2. 1904.
[65] Ulcus Rodens, &c., German Medical Weekly, Nov. 4th, 1904. Society Reports.
[66] Lyon Médical, No. 5, 1904.
[67] Treatment of Cancers, &c., Progress in the Roentgen Ray Treatment. vii., 3, 1904.
[68] Roentgen Treatment of Carcinoma. Congress of the German Society for Surgery, 1904. Reference in Progress of the Roentgen Ray Treatment, vii.. 4, 19 4.
[69] Society of Physicians in Innsbruck, Nov. 14th, 1903. Reference in Progress in the Roentgen Ray Treatment, vii., 4, 1904.
[70] A Preliminary Note, &c., Progress in the Roentgen Ray Treatment, vii., 4, 1904.
[71] Progress in the Roentgen Ray Treatment, viii., 2, 1904.
[72] On the Indications for Treatment with Roentgen Rays in Dermatology, Progress in the Roentgen Ray Treatment, vii., 2. 1904.
[73] On Roentgen Therapeutics of Cancroid, Berlin Medical Society, Oct. 21st, 1903. Ref. in Progress in the Roentgen Ray Treatment, vii., 3, 1904.

success. In the discussion in connexion with this lecture Lesser mentioned that he had seen a cure in the case of four out of five cancroids and an improvement in the fifth. Von Bergmann persists in his assertion that the best treatment of cancroid is excision. At a meeting of the Société Médicale des Hôpitaux de Paris on June 10th, 1904, Béclère[74] referred to a cancroid as large as a goose's egg which was cured by 13 applications of rays. Schild[75] draws the conclusion: "With skin cancroids Roentgen treatment produces excellent results, even when surgical interference does not stop the process. Cicatrisation is very trifling." Kienböck[76] says: "The flat superficial epithelioma—e.g., that situated on the edge of the lip or alæ nasi—is sometimes cured by a prolonged exposure ('5 H'), or even several, given at fortnightly intervals. Ulcers become closed after a few weeks." Albers-Schönberg[77] introduced at the medical meeting in Hamburg on Nov. 1st, 1904, a patient who was cured of an extensive cancroid of the nose in 33 sittings. Tuffier[78] saw an epithelioma of the left ala nasi completely healing up. Lassar[79] emphasises the fact that Roentgen therapeutics is not to be compared with, but only used as a supplement to, surgical treatment. At the Berlin Medical Society on May 4th von Bergmann again expressed himself very sceptically on the value of the Roentgen treatment and regarded it only as a kind of caustic. This conception was very properly opposed by Lassar. Baermann and Linser[80] are opposed to the view that Roentgen rays applied to the skin act first on epithelium or epithelial tissues, and they suppose that the blood-vessels are first and most strongly influenced before any other tissues, and certainly before the skin. The curative effect on skin carcinoma is explained by the fact that the influences upon the vessels brought about by Roentgen rays lessens the supply of blood of the carcinoma and brings about its degeneration. Pfahler[81] treated an ulcerated cancer of the lower lip with 42 applications of rays; the tumour diminished a little, and also the swelling of the glands under the lower jaw to some extent. An operation was finally performed and then the rays were applied. Pfahler advises the combination of Roentgen rays with the knife in a case of cancer on the lip. Freund[82] demonstrated to the Royal (Austrian and Hungarian) Society of Physicians at a meeting on Oct. 28th and later, cases of epithelioma cured with satisfactory cosmetic result. Leonard[83] reports cases of eyelid epithelioma in which he has seen good results. Holzknecht[84] declares Roentgen therapeutics to be a "strict indication" in cases of superficial and papillary cancer of the skin. He summarises the treatment as follows: 1. Careful application on definite lines is important. 2. Protection of healthy parts is necessary. Only one centimetre of healthy tissues should be subjected to the influence of the rays. 3. Method of application. Apply the full current from the commencement and afterwards repeat at monthly intervals. 4. Dose "4–5 H." 5. Regulation of current and effect to be aimed at. Reaction of the second degree to be produced in the second week, and the maximum reaction to be reached in the third week. 6. Effect produced at different stages: Shedding of skin in cases of papilloma; absorption in cases of infiltrating or ulcerating varieties; formation of epithelium. Note.—On account of the difficulty of the rays gaining access to the deeper regions portions of growth may be left behind. 7. If the portions of growth which may have been left behind do not soon make their appearance there will be no recurrence. 8. Length of time for one sitting, 5–20 minutes. 9. Duration of treatment, one to several months. 10. The quickly growing and deeply extending skin carcinomata are much less favourable for treatment. One may agree with these directions, with the exception of the strength of current recommended. Unfortunately, experience teaches us that different individuals react in various ways to the Roentgen rays, and that one cannot lay down definite rules.

Schär[85] generally is in favour of the Roentgen treatment for cancerous affections. Görl[86] recommends radio-therapeutics for epithelioma, especially for members of sick clubs, as this method only requires a short time and is to be preferred to other modes of procedure. Werzher[87] demonstrated in Dresden (Jan. 28th, 1905) successfully treated cases of cancroid, and during the discussion Hänel emphasised the fact that he did not treat cancroids with Roentgen rays but only by operation. Rupprecht considers the curability of superficial carcinoma as practically unimportant, as it is necessary to remove not only the carcinoma but also the regional lymph glands. Werzher stated that he also was in favour of surgical treatment for the deeper skin carcinomata. Cancroids of the face attack the lymph glands either not at all or much later than other carcinomata. In opposition to this view Hänel asserted that the operation was specially indicated in superficial carcinoma. In a series of cases of cancroid and carcinoma of the skin and mucous membrane Lesser[88] tried at one part the effect of arsenic, at another that of Roentgen and radium rays. He comes to the conclusion that, with the help of the Roentgen rays, cancroids of the skin, even of long duration and large extent, can be completely cured. On the other hand, tumours, on account of their depth, are not materially influenced. We can only consider affected glands as being suitable for treatment with Roentgen rays when they are entirely superficial. Leredde[89] says: "Among the methods for the treatment of epithelioma—excision, radio-therapy, curettage, &c.—one must choose according to circumstances. Radio-therapeutics are contra-indicated in cases of rapidly growing epithelioma and in those which have existed a long time. Occasionally a fatal infection of the lymphatics is said to be the consequence of radio-therapeutics." The case of Leredde, however, proves indeed nothing: a melanotic nævus was treated at first by cauterisation, later with Roentgen rays, and infection of the lymphatics followed. Andhuy[90] refers to a case of epithelioma of the face which became cured. Bodin and Casdex[91] saw two cured epitheliomata. Pearson[92] mentions the case of a man, 75 years old, with a large rodent ulcer of the left eye which was treated with good results. Lancashire[93] thus describes the result of the reaction of Roentgen rays upon rodent ulcer as follows: The hard edges of the ulcer soften and the adjoining tissues become erythematous, granulations spring up on the surface, the wound becomes flush with the skin, and finally becomes covered with epithelium spreading in from the edges. Wise[94] is of opinion that in "selected cases" radio-therapeutics constitute an ideal remedy in the treatment of epithelioma and rodent ulcer. A very good case of my own[95] was that of a woman, 70 years of age, who for several years had noticed what looked like a wart at the point of junction of the right side of the nose and the cheek. This wart grew and became ulcerated. At the same time, granulation tissue which proliferated rapidly and bled easily shot up in the adjoining parts. Before and during the Roentgen treatment, which consisted of 14 sittings of about ten minutes' duration, the most prominent parts of the papilloma were excised with scissors and the bleeding stopped. In the excised parts cells of an actively growing carcinoma were repeatedly shown. After the fourteenth sitting there was no trace of new growth and in its place was a smooth scar. It is noteworthy that a non-ulcerated wart of the cheek which was exposed to the action of the rays atrophied completely, while warts on both the left naso-labial furrow and right half of the upper lip which were not so exposed have remained unaltered. Lehmann[96] demonstrated at the meeting of German

[74] Ref. in Progress in the Roentgen Ray Treatment, viii., 2, 1904.
[75] On Radio-therapeutics in Skin Diseases. Ref. in Progress in the Roentgen Ray Treafment, viii., 4, 1905, Med. Society, Madgeburg, 1904.
[76] The Present Status of Radio-therapeutics, Progress in the Roentgen Ray Treatment, vii., 6, 1904.
[77] Ref. in Progress in the Roentgen Ray Treatment, viii., 6, 1905.
[78] La Presse Médicale, No. 10, 1904.
[79] Berlin Clinical Weekly, No. 20, 1904.
[80] Munich Medical Weekly, Nos. 23–25, 1904.
[81] Journal of the American Medical Association, July 16th, August 15th, 1904.
[82] Demonstrations. Vienna Clin. Weekly, No. 44, et seq., 1904.
[83] American Medicine, vol. viii., December, 1904.
[84] Röntgen Therapeutics. Therapeutics at the Vienna Clinical Institutions, 1904.
[85] The Treatment of Cancerous Affections with Roentgen Rays, Bern, 1904.
[86] Radio-therapeutics and Sick Clubs. Progress in the Roentgen Ray Treatment, viii., 4, 1905.
[87] Annual Report of the Society for Advancing Natural and Medical Knowledge in Dresden, 1904–1905, Munich. 1905.
[88] On Cancer Therapeutics, Periodical for the Investigation of Cancer, 111, 4, 1905.
[89] The Dangers of Radio-therapeutics in Epithelioma of the Skin, Practical Review of Cutaneous Ailments, &c., January 1905.
[90] On a Case of Face Epithelioma, &c., Archives d'Électricité Médicale, June 10th, 1905.
[91] Two Cases of Cutaneous Epithelioma, &c., Bulletin de la Cos. Scient. et Med. de l'Ouest, vol. xiv., 1905.
[92] Archives of Röntgen Ray. November, 1905.
[93] Reference in Pester Medizinisch-Chirurgische Presse, No. 4, 1906.
[94] St. Paul Medical Journal, No. 4, 1906.
[95] Roentgen Rays and Radium in Epithelioma, Münchener Medicinische Wochenschrift, No. 6, 1906.
[96] New York Medical Monthly, No. 3, 1906.

physicians in San Francisco on March 6th, 1906, among other cases, a man, 60 years of age, with rodent ulcer, in whom a cure resulted after two applications of rays, with the exception of a small lump of the size of a hemp-seed on the edge of the nose; also a man, 54 years of age, with bosses of epithelioma of the left cheek and an ulcer—the ulcer healed after a few applications of rays, the bosses after two months; also a man, 62 years old, in whom a hard induration at the root of the nose had healed after six applications of Roentgen rays; also a case of an infiltrated ulceration of the lower lip in a man, 62 years old, in which, after a few applications of rays, a cure promptly took place without scars. "The case must be kept under observation, as epitheliomata of the under lip, as we know by experience, relapse." Lehmann arrives at the following conclusions: "I should like to point out that I quite appreciate these results and the fact ..... that a surgical operation would in most cases be a more rapid process, but as the usual seat of these epitheliomata is near the inner or outer angle of the eye or in the nasal angle, scars from operations, in consequence of their contraction, very often lead to disfigurement. ..... Apart from this, we all know that a great number of patients point-blank refuse an operation. ..... With reference to the latter (period of freedom from recurrence after Roentgen treatment) I can say nothing in my own cases; the available statistics have shown, however, that relapses after the application of Roentgen rays are in most cases somewhat less liable to occur than after operations. The cosmetic result is certainly better than after any other method, the application absolutely painless, and may nowadays be said to be without risk. I should call the Roentgen treatment in the case of superficial epithelioma of the face the method of choice."

Martial [97] commenced a debate on the Roentgen treatment of skin epitheliomata in which Gaston, Danlos, Leredde, Sabouraud, Bissérié, Belot, Béclère, and others took part, and came to the following conclusions: radio-therapeutics is to be resorted to when the patient refuses operation or when it becomes a question of the cosmetic effect; but even in such cases only when one is sure that one has to deal with no deeply penetrating tumour. All skin epitheliomata can be acted upon by Roentgen therapeutics, even those with spindle cells. Unsuitable cases are those of very extensive and rapid growth. The question as to whether cases of melanotic sarcoma are suitable has not yet been decided. Roentgen treatment is contra-indicated in cases of cancer of the lip and tongue. Proportionately large doses are required and even after healing Roentgen rays have to be applied for some time.

Weik [98] has treated 26 cases of cancer of the skin. Among them he cured an epithelioma of the abdomen in six sittings, a rodent ulcer of the nose after six sittings. One rodent ulcer of the nose improved after two sittings. Obvious improvement of an inoperable epithelioma of the eye occurred after ten sittings (hard tubes used); case still under treatment. Rodent ulcer of the right cheek; Roentgen treatment in combination with radium yielded an excellent cosmetic effect, but no complete cure. Rodent ulcer of the nose; combined radium-Roentgen treatment; marked improvement, a cure may be expected. Rodent ulcer of the upper lip. Combined Roentgen-radium treatment effects a cure. Rodent ulcer of the angle of the eye; combined Roentgen-radium treatment effects a cure. Rodent ulcer of the nose; combined Roentgen treatment was not able to lead to a cure. Rodent ulcer of the left temple; combined Roentgen-radium treatment effects a cure. Rodent ulcer of the left temple; healing after two sittings; relapse after ten months; cauterisation then used. Rodent ulcer of the left temple; improvement after 30 sittings; removal with the knife; cauterisation; relapse. Rodent ulcer of the upper lip (pavement-celled epithelial carcinoma); after four applications of rays further degeneration; knife and Paquelin's cautery then used; cure after two sittings. Rodent ulcer of the nose; healing after three sittings; recurrence; Paquelin's cautery; a few energetic applications of Roentgen rays; improvement (still under treatment). Rodent ulcer of the nose; no result after three sittings; Paquelin's cautery; one application of rays; cure with a perfect scar. Inoperable rodent ulcer of the left cheek; 11 sittings with good results; hard edges removed with caustic; two sittings; result promises to be good. Rodent ulcer of the right cheek; two sittings without result; removal of the edge; Paquelin's cautery; two applications of rays; cure. Weik sums up his experience in the following sentences which I quote here *in extenso* as they originate from so eminent a source as Neisser's Clinic.

> Of 26 cases, nine (i.e., 34·6 per cent.) are regarded as "cured." True, in some the cure dates back no farther than three months, in others it has lasted for about a year. It is therefore readily admitted that one cannot speak of a lasting cure as the time for observation in some cases has been so very short, indeed surgeons demand three years' freedom from relapse as the measurement of a permanent cure. We do not intend by this remark to suggest that this method of treatment is a rival to operation; we are only anxious to show what can be performed in this direction with Roentgen rays, especially in those cases which are no longer surgically operable. The fact that one succeeds in a relatively short time in making a rodent ulcer, one, for instance, on the face, and one which is often of considerable extent and has perhaps existed many years, cicatrise in such a simple manner decidedly turns the scales in favour of Roentgen treatment. In spite of the fact that in many cases, unfortunately, there is no real cure yet this will never be sufficient inducement to us to abandon Roentgen rays in favour of therapeutical purposes. Finally, what does it matter if with a clinical and relatively benign affection, and one of the nature we are here dealing with, that is, one which never increases to any dangerous extent or threatens life, if now and then a harmless recurrence occurs? for at any time it may be removed by Roentgen or radium rays. We must remember, too, that such an affection, especially when it occurs on the face, frequently cannot be removed surgically and we often have no other means at our disposal.

To those cases in which healing took place a number of cases are added which, already partly cicatrised, have relapsed again or are partly cured, leaving behind a minimum amount of carcinomatous tissue. In such instances treatment by radium is attended by good results.

The appearance or absence of recurrences decides to a certain extent the value of any particular method of treatment. From this point of view the cases treated with Roentgen rays appear, perhaps, unfavourable when compared to those treated surgically, although, indeed, surgery guarantees no absolute freedom from recurrence. The frequent recurrences after Roentgen treatment are probably explained by the insufficient application of rays upon the affected parts, whereby some of the carcinoma cells are undestroyed and afterwards grow up from the bottom; for the Roentgen rays, as is well known, only penetrate the tissues to a depth of about five millimetres. This drawback will eventually be remedied by improvements in technique. On the other hand, treatment with Roentgen rays is a more ideal one, in so far as these rays in the first place attack the pathological cells almost exclusively and therefore exert a selective action. The most striking successes are probably to be met with in non-operable ulcerated carcinomata of the face, which offer, therefore, the most favourable field for Roentgen therapeutics.

Schmidt [99] demonstrated at the second German Roentgen Congress several cases of rodent ulcer which were cured by the application of rays continued from six months to two years and which have up to now remained free from recurrence for two years. Genuine carcinomata have yielded few favourable results and Schmidt would therefore have the application of Roentgen rays limited only to skin cancroids which do not penetrate very deeply. Rosenberger [100] spoke at the same congress on the therapeutical value of Roentgen rays in surgery. In all cases of skin carcinoma, sarcoma, and rodent ulcer the effect of the rays was favourable. The work of Försterling [101] on disturbances of growth after brief applications of Roentgen rays is very important. On the living tissues they exert a destructive action. Their healing properties are due to the fact that they influence isolated portions of tissue more quickly and more intensely than others. It is the same in leukæmia, in malignant growths, in warts, epithelioma, lupus, and other skin diseases. In the case of bacteria and other one-celled entities these growth-preventing properties of the Roentgen rays have already been repeatedly investigated. Perthes [102] found that if the Roentgen rays were applied for 45 minutes at a distance of ten centimetres to one of the wings of a chicken on the first day of its life the wing to which the rays had been applied remained backward in growth from the seventh day onward. In 20 animals Försterling found there was a material disturbance in growth by means of the Roentgen rays. Also branches the buds of which were on the point of opening remained backward in growth after the application of the Roentgen rays or withered. From these experiments it results that in young animals, as well as in

[97] Indications and Contra-indications of Radio-therapeutics, &c., Revue Pratique des Maladies Cutanées Syphil. et Vener, vol. v.
[98] Periodical of Electro-therapeutics, vol. viii., No. 4, 1906.
[99] Reference in Vienna Medical Weekly, No. 16, 1906.
[100] Ibid.
[101] Zentralblatt für Chirurgie, No. 19. 1906.
[102] Langenbeck's Archiv für Klinische Chirurgie, Band lxxi., p. 978, ff.

plants, even a single brief application of the Roentgen rays can produce a material disturbance in growth. From which it follows that children must only undergo Roentgen treatment on account of malignant growths or other malignant diseases—e.g., leukæmia.

To complete this chronological table Hahn's [103] conclusions must be considered. The results with the treatment of rodent ulcer are exceedingly satisfactory; wider statistics report 95 per cent. permanent successes. The scar is in most cases excellent; very few recurrences were observed. Even in cases where the ulcer had involved the face and head, and where an operation was out of the question, success was yet attained. Less favourable are the results upon the remaining carcinomata. Though pain is generally eased, yet it is the exception to meet with cases in which the action of the Roentgen rays has produced a good result; they can never replace surgical treatment. The more important works relating to this subject are included in the table which I show to you, but only a small proportion of the total number of cases mentioned in the literature on the subject could be utilised. I have endeavoured to report the exact words of all those authors who have formed definite opinions regarding this new method of treatment. The names of medical men who only report single cases are, however, not included in this compilation which I here lay before this assembly. Altogether, about from 1600 to 1800 cases of epithelioma which have been treated with Roentgen rays are mentioned in the literature.

[*Note.*—An article by S. A. Heyerdahl was published on "Roentgen Treatment in Cases of Malignant Tumour."[104] He treated 11 cases of rodent ulcer, four of non-ulcerating epithelioma of the skin, three of lip cancer, and other malignant tumours with Roentgen rays. This author has also investigated the tumours treated with Roentgen rays histologically and found that the cancerous cells degenerate and later disappear. He concluded, therefore, that the effect of the Roentgen rays does not consist in destruction as with cauterisation. He has only obtained a cure in purely superficial cases. On several occasions the treatment has been useful in alleviating pain. A case of lymphosarcoma femoris, which was also examined histologically, was cured, and remained without recurrence for two months—this being the length of time the patient was kept under observation.]

To my colleagues who have sent me original communications and to all those who have helped me in my research I would take this opportunity of tendering my hearty thanks. The abundant literature and the data which have been placed at my disposal by some of my colleagues as well as my own observations and experience have led me to express decided opinions and to form the following conclusions. 1. The favourable effect of Roentgen rays on epithelioma is indisputable. 2. The treatment with Roentgen rays must not, however, be considered in a category by itself; it must rather be looked upon as an alternative or as an addition to treatment by other methods. 3. There are obviously biological differences in the various kinds of epithelioma which have so far not yet been sufficiently explained pathologically and anatomically and on which the success of the Roentgen treatment is dependent. 4. To aid the effect produced by the Roentgen treatment small operations may be done and the cautery applied according to the nature of the case. 5. In those cases in which no favourable influence is produced by the Roentgen rays, at the latest after the fourth or fifth sitting, this treatment must be discontinued, as little more is to be expected from it. 6. The intervals between the single sittings must not be too long; a more active Roentgen light—medium soft tube—with, of course, a careful covering of the healthy parts of the skin, is to be recommended. 7. In the case of surgical operations a subsequent application of rays is eventually desirable. 8. It is of an especial importance to lay stress on the fact that by the application of Roentgen rays the patient is saved from an operation, and the result produced by the Roentgen treatment is not only equally good as regards the cure but much better as regards the subsequent appearance.

[103] Has Roentgen Treatment Effected what it Promised? Progress in the Roentgen Ray Treatment, vol. viii., No. 5.
[104] Magaz. for Lägevid, 1906, p. 329.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The Licence of the Royal College of Physicians was conferred upon Mr. Howard Decimus Buss, M.R.C.S. Eng., L.S.A., of University College Hospital, at the quarterly Comitia on Oct. 31st.

A CONTRIBUTION TO THE STUDY OF THE RELATIONSHIP BETWEEN AVIAN AND HUMAN TUBERCULOSIS.[1]

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THE question raised by Koch in regard to the identity of bovine and human tuberculosis is one which cannot but be extended beyond these two particular forms of tuberculous disease. And amongst others of kindred practical importance avian tuberculosis especially claims our consideration. The extensive consumption of birds as articles of human food invests the subject with a large degree of practical importance; and correlated with this is the question how far avian tuberculosis may be contracted from a human source. In our investigation we have included a method of testing the two bacilli, which has not before been practised in this connexion—viz., the study of the phagocytosis of the two micro-organisms (avian and human) when presented to the normal polymorphonuclear leucocytes in the presence of tuberculous serum which has first been saturated with one of the bacilli in question. The avian material which we employed in these experiments was derived from birds which had died in the gardens of the Zoological Society during the last two years. During this period necropsies have been made upon 500 birds, of which about 150 presented lesions referable to tuberculosis. It may be pointed out here that, as in the case of human disease, a point of departure is obtained by taking a typical example of pulmonary tuberculosis, so in that of the avian a typical case may be taken as one in which—with or without ulceration of the intestine—there is tuberculosis of the spleen and liver, the lungs being uninvolved. This may be selected as a standard of the avian disease since it is the usual form which fatal tuberculosis assumes in birds. The sputum was selected from active cases of pulmonary tuberculosis, and before being used for experimental purposes it was tested and found to contain numerous tubercle bacilli. The first important question which has to be determined is:—

Can tuberculosis be induced in birds by means of human tuberculous sputum?—In the first series of these experiments, out of three pigeons[2] which were fed for 4, 7, and 11 weeks respectively, upon bread alone, with which tuberculous sputum had been mixed, none contracted tuberculosis. In the second series four pigeons were fed for periods of 7, 8, 11, and 12 weeks with tuberculous sputum made into a paste with bread, and were also given ordinary grain; none contracted tuberculosis. In the third group of experiments eight pigeons were fed with peas stirred in tuberculous sputum; five peas were dropped into the mouths of the birds almost daily with the exception of Sundays. The results of these experiments were as follows. In none out of eight pigeons fed almost daily for periods varying from six to 36 weeks with human tuberculous sputum and grain did any intestinal tuberculosis develop or any disease of the abdominal or thoracic viscera; five guinea-pigs which were injected subcutaneously with the salt suspension of the spleens of four of the birds failed to contract tuberculosis, except in one instance. In this case the spleen was obtained from a bird which had been fed for 19 weeks. There was no macroscopic evidence of disease. The guinea-pig, however, which had been inoculated with the saline suspension of the spleen developed typical tuberculosis, such as is set up in these animals by injection with human tuberculous sputum. It may be assumed that in this bird bacilli were transferred to the spleen from an intact intestinal mucosa without producing any lesion; that they were deposited as innocuous particulate material might be and that, when transplanted into the suitable tissue of the

[1] A paper read before the Pathological Section of the Royal Society of Medicine on Nov 19th, 1907, and which will be published in detail in the proceedings of the Society.
[2] The birds used for the whole of our experiments have been healthy pigeons, none of which ever developed spontaneous tuberculosis.

guinea-pig, these bacilli produced their ordinary pathogenic results.

The inoculation of pigeons with tuberculous human sputum.—In these experiments sputum derived from cases of pulmonary tuberculosis was made into an emulsion with normal salt solution and injected into the base of the wing. Of six pigeons so injected two showed no lesion (from 10 to 11 weeks respectively), two showed local sepsis but no tuberculosis (10 weeks), and two showed a slight local tuberculous lesion (7 weeks). Of six guinea-pigs similarly injected two died from sepsis (1 week) and four showed advanced tuberculosis (3½, 4, and 6 weeks respectively).

The inoculation of pigeons with the tuberculous organs of guinea-pigs infected by means of human sputum.—In this series human tuberculous sputum was first injected into guinea-pigs and a suspension prepared from their tuberculous organs for inoculation into pigeons with a view of eliminating the septic element of the sputum, and at the same time of contrasting the relative pathogenicity of the same strains of human bacilli for the guinea-pig and pigeon. 14 pigeons were thus injected. The results were as follows. The guinea-pigs injected with tuberculous sputum showed a rapid tuberculosis in every case except one. One animal died within a week from sepsis. The pigeons inoculated from the tuberculous material of these guinea-pigs were killed within periods varying from three days to 16½ weeks. In the earlier experiments a local lesion was usually present but no visceral tuberculosis, while in the later experiments there was no disease of any kind. These results appear to bring out a *retrogression* instead of a *progression* of the infective process. The high resistance of birds to infection with the human bacillus is thus forcibly illustrated.

Results of the feeding of pigeons with tuberculous material obtained from birds.—The birds used in these experiments were kept quite apart from those fed or inoculated with human sputum. Six pigeons were fed with the tuberculous livers and spleens of various birds, mostly from the gardens of the Zoological Society. The pigeons were fed for periods varying from eight weeks up to 33 weeks. The last-mentioned bird received tuberculous material from 17 tuberculous birds of various kinds. The first pigeon, killed at the end of eight weeks, showed no macroscopic disease in any of the viscera. The second bird, killed at the end of 12 weeks, showed no macroscopic disease in any of the solid viscera, but the intestinal mucosa was congested for a length of 12 inches and studded with minute greyish elevations. On microscopical examination extensive tuberculous disease of the mucosa was found, the lesions containing great numbers of acid-fast bacilli. The third bird, killed at the end of 17 weeks, gave a similar result. The fourth bird, which was killed at the end of 20 weeks, showed the peritoneal surface of the intestine to be thickly covered with small tubercles, while microscopically there were tuberculosis of the spleen and extensive disease of the intestine. In the case of the fifth bird, killed at the end of 24 weeks, a similar result was obtained, with the additional fact that the liver showed diffuse tuberculosis. The sixth pigeon gave a similar result.

The transference of charcoal through the intact intestinal mucosa of the rabbit.—The transference of particulate material from the epithelium of an intact mucosa is a subject of high interest. It has long been known that in the mesenteric tuberculosis of children, although the glandular disease may be far advanced, no lesion may be recognisable in the intestinal mucosa, notwithstanding that the latter must have been the entrance site of infection. Although in our experiments, in which pigeons have contracted tuberculosis from the ingestion of avian tuberculous tissue, there has been no ulceration of the mucosa, the lymphatic structures of the mucosa have, nevertheless, been extensively affected, and in some cases in addition the muscularis and peritoneum; in one case the infection had reached the liver and in two the spleen. In order to see if a similar passage of inorganic material could be induced through the intestinal mucosa, we devised the experiment of administering carbon to young rabbits for prolonged periods. The feeding of a very young rabbit was begun on Sept. 13th, 1905, the food comprising oats, cabbage, and a liberal supply of the finest levigated wood charcoal made into biscuit with flour and lard. The animal was killed after 46 weeks, having consumed altogether about six pounds of charcoal. After death the Peyer's patches were found to present a grey and slaty mottling. The extraneous material was discovered in these and in the mesenteric glands, the intestinal mucosa itself being perfectly normal. Sections of the spleen and bone marrow failed to show the presence of carbon particles. We had thus succeeded in reproducing experimentally in the intestinal tract the common pigmentation occurring in the bronchial glands from the inhalation of carbon.

The results of the inoculation of pigeons with salt suspensions of tuberculous organs from other birds.—Of the 14 pigeons which were inoculated for various periods, it was found that the birds which were kept for the longest period from the time of inoculation showed the most marked evidence of tuberculosis, whilst those which were killed at the earliest periods gave either no result or only a local lesion. Those birds which were killed from periods varying from 13½ to 30½ weeks showed tuberculosis of the spleen together with the local lesion.

The inoculation of guinea-pigs with suspensions of tuberculous material from birds.—Of the 11 guinea-pigs which were inoculated in this way and allowed to live from periods varying from nine days up to 22 weeks, we failed to find tuberculosis of the viscera in any instance. It appears from these results that the infective process, although it may produce a local lesion and a secondary involvement of the neighbouring lymphatic glands, does not extend to the abdominal or thoracic viscera, and this in spite of the fact that the time allowed in some of the experiments amounted to 22 weeks. Another point worthy of remark is that, in spite of an advance in the infective process, retrogression appeared to take place when the animals were kept for considerable periods. In both of these ways the results differ from those which follow similar inoculation made upon guinea-pigs with human tuberculosis.

The feeding of a rhesus monkey with avian tuberculous material.—The animal was kept for a month under observation and was to every appearance healthy at the time when the feeding commenced on Jan. 3rd, 1907. Small portions of the tuberculous spleen and liver of certain of the tuberculous birds used for feeding the six pigeons already referred to were finely mixed and inserted into the middle of slices of banana. Although the monkey was fastidious he was induced to take a small amount of the tuberculous material so offered on each occasion. The animal remained quite healthy and was killed with chloroform on July 8th, 1907, 22 weeks after the commencement of the experiment. No trace of disease was discovered at the necropsy in any of the thoracic or abdominal viscera and none in the intestine which was slit up throughout and critically examined. There was no lesion on the peritoneum.

Is the human tubercle bacillus convertible into the avian?—The foregoing observations bring out unquestionably a marked difference in the pathogenicity of the human and avian bacilli. The human bacillus is pathogenic to the bird to a very limited extent only; it is markedly pathogenic to the guinea-pig and to the monkey. The avian bacillus is markedly pathogenic to the bird, while it is scarcely pathogenic to the guinea-pig or to the monkey. Athough this marked difference exists between the two bacilli the question nevertheless arises, how far the one is a form of the other modified by its insertion into, or passage through, another species of animal. The following experiments were made with the idea of ascertaining how far the characters of the human bacillus were modified by its passage through the bird; whether, after such a passage—that is, after its exposure to the cells and tissue-juices of the bird—it would, if inoculated into the guinea-pig, reproduce the generalised disease which arises in that animal from the direct inoculation from human sputum or whether it would produce a local and glandular disease only, such as is set up in the guinea-pig by the inoculation of the avian bacillus. In the case of each inoculated bird the spleen was used to inoculate the guinea-pig. Five pigeons received an injection into the base of the wing of one cubic millimetre of a salt emulsion of tuberculous sputum in which a plentiful supply of tubercle bacilli was demonstrated. The birds were killed at different periods and the spleen in each case was rubbed up in a mortar with sterilised salt solution and injected into the guinea-pig. The first pigeon was killed seven days after inoculation. A guinea-pig which was killed 52 days after subcutaneous inoculation with the spleen of this bird showed general tuberculosis. The second pigeon, killed 14 days after inoculation, gave a similar result when its spleen was inoculated into a guinea-pig. The third pigeon, killed four

weeks after inoculation, produced generalised tuberculosis in the guinea-pig when its splenic emulsion was injected into that animal. The fourth pigeon was killed six weeks after inoculation; the result was similar to the last. The fifth pigeon was killed eight weeks after inoculation; its spleen on being inoculated into the guinea-pig produced general tuberculosis at the end of 44 days from the date of inoculation.

The relationship of the human to the avian bacillus as tested by means of the "opsonic" index.—A large number of experiments were made with the serum obtained from cases of human tuberculosis and avian tuberculosis on human and avian bacilli. In most cases normal human leucocytes were used in these experiments but in some cases birds' serum was treated with washed birds' leucocytes. The results of our observations show uniformly and in each case clearly that the opsonin in the blood serum of a tuberculous patient is removed or, more correctly, reduced when the serum is saturated with the avian bacillus as markedly as when it is saturated with the human bacillus. No specific difference in the behaviour of these two bacilli is brought out by these observations.

CONCLUSIONS.

1. The human tubercle bacillus is pathogenic to the pigeon in a very limited degree only. It sets up no disease of the intestine or of the abdominal viscera when introduced (in sputum) with food into the alimentary tract, even for prolonged periods (six months), and in either moderate or excessive quantities. It sets up a local, or a local and glandular, disease only in the pigeon when injected (in sputum) into the muscles or subcutaneous tissues. It sets up a local, or a local and glandular, disease only in the pigeon when injected into the muscles or subcutaneous tissues from the organs of guinea-pigs which have been infected by inoculation with human sputum. The impossibility of producing infection in the pigeon by means of tuberculous sputum, as shown in our work, does not allow us to accept the statements which have been made in the other direction, for these statements do not rest upon experiment but on inferences based only upon possibilities. Although the disease may be spread from bird to bird it has still to be determined whether there is any further source of infection. Our experiments only show that if there is such, it is not human. Neither can we accept the statement made by some that the subcutaneous inoculation of birds with human sputum will produce avian tuberculosis—i.e., the generalised and fatal disease as it is seen naturally in birds. In none of our pigeons has anything other than a local lesion or a local and a glandular lesion followed; moreover, the disease so induced instead of progressing has (as told by the examination of birds at different dates after infection) retrogressed, and in some disappeared.

2. The avian tubercle bacillus, as tested from various kinds of birds, is pathogenic to the guinea-pig in a very limited degree.

3. The human bacillus is not convertible into the avian by inoculation into the bird—i.e., the bacilli are not identical. Theoretically it would, of course, be quite possible that the human bacillus after its insertion into the pigeon might lose certain of its characters and become incapable of exciting more than a trivial disease in the guinea-pig or in the human subject from which it was originally derived. Our experiments do not, however, support this theoretical possibility. Using pigeons into the muscular and subcutaneous tissues of which a salt emulsion of human tuberculous sputum had been injected, we adopted the method of making a salt suspension of the spleen from these birds, killed at different dates after their inoculation (one week, two, four, six, and eight weeks), and injecting this into the subcutaneous or muscular tissues of guinea-pigs. In addition we similarly used the local lesion produced in the same pigeons. A fact of great importance to observe here is that the spleens of these pigeons in no case presented any naked-eye disease. In each bird there was a lesion at the site of inoculation; in the birds allowed to live the longest this was of the smallest extent. Although there was no disease of the spleen, the salt suspensions of this organ in every instance produced not merely a local lesion in the guinea-pig but a general tuberculosis. The human bacillus after a sojourn of as long as eight weeks in the spleen produced the glandular and visceral disease in the guinea-pig as though it had been transferred directly to this animal from human sputum. It did *not* produce merely a local or a local and glandular disease, such as it should have done had it acquired the characters of the true avian micro-organism.

As evidence of the non-identity of the human and avian tubercle bacillus we attach more importance to the positive results afforded by feeding and inoculation experiments than to the negative evidence in the other direction provided by the "opsonic" test. The latter shows, it is true, that either bacillus will extract the "opsonin" from tuberculous serum. But we do not regard this as a proof of their identity; it is by no means a proof, i.e., of the identity of their physiological or chemical properties.

Certain investigations in course of publication (S. G. Shattock and L. S. Dudgeon) show, amongst other things, that the "opsonin" may be extracted from tuberculous serum by saturating it with a thick suspension of melanin—an observation proving that the removal of "opsonin" by bacilli is not wholly indicative of specificity but that it is largely mechanical.

NOTES OF

FOUR CASES IN WHICH FILIGREE-IMPLANTATION WAS SUCCESSFULLY APPLIED TO ABDOMINAL HERNIÆ PREVIOUSLY CONSIDERED INCURABLE.

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SOME time ago I published in the *Practitioner* the notes of seven cases of hernia in which I had applied the method of filigree-implantation as devised by Willard Bartlett. Since that time I have had occasion to employ it in a considerable number of cases, all of which have justified the claims put forward for its more extensive adoption. There are, however, among these cases four which merit publication for several reasons. First, three of them were of the same variety—viz., herniæ in the region of the appendix, two of them, indeed, resulting from the operation of appendicectomy. Secondly, all of them were genuinely incurable by any of the usual operations for ventral hernia, two of them being cases of recurrence and having been considered by surgeons other than myself as inoperable. Thirdly, all of them were complicated by pain (in one case by paroxysmal colic), retching, or inability to perform the ordinary duties of life owing to the constant prolapse of abdominal contents on the most trivial exertion. Lastly, two of them required filigrees of such size as to constitute (so far as I am aware) a record in the introduction of foreign bodies into the living tissues for curative purposes.

CASE 1.—In August, 1906, a woman was sent to me by Dr. A. H. Croucher of Eastbourne, with the following history. 18 months previously she had undergone an operation for uncomplicated appendicitis at the hands of a well-known operator in London. About nine months later, having removed the belt she was wearing, the cicatrix began to stretch and soon a well-marked hernia resulted. The belt was again resorted to but failed to control it, the hernia growing larger and being accompanied by pain in the iliac fossa and at times by nausea. She accordingly returned to her surgeon who endeavoured to repair the gap by approximating the muscles. Within three months the hernia again appeared, and this time the pain and nausea were such as seriously to incapacitate her. Returning to her surgeon, however, she was told that owing to the friability of her muscles her condition did not admit of any prospect of cure, and she was therefore recommended to wear her belt permanently. This she did for some weeks without relief, the hernia gradually increasing in size. On examining her I found her to be anæmic but otherwise healthy. The scar of her previous operations was very thin, pigmented, and widely stretched. It measured six inches in length, and on coughing or straining it bulged in an alarming manner. The breadth of the hand could easily be passed into the abdomen and coils of bowel could be felt to be adherent to the sac, manipulation of which produced feelings of nausea.

On Oct. 11th, 1906 Dr. F. W. Hewitt administering the anæsthetic, I excised the cutaneous scar and opened the abdomen at the extreme upper end of the incision which measured eight inches in length. Introducing two fingers

into the abdomen, I found a coil of bowel adherent to the right side of the gap and then completed the peritoneal incision in the whole length of the wound. The adhesions, which were of the ileum chiefly, were separated with some difficulty and the excess of sac was removed, the edges being sutured with a continuous catgut suture. The outer margin of the rectus muscle was now sought for and found to be much pushed inwards and rather fibrotic; it was freed as far as possible and the peritoneum was stripped back from the deep surface of the transversalis fascia for a distance of about two inches. The margin of the oblique muscles was next found and freed from scar tissue, and the peritoneum on this side was treated in a manner similar to that already described. All oozing was now controlled by the use of hot saline lotion, and the edges of the wound being widely retracted, the filigree, measuring 6½ inches in length and 3 inches in width, was carefully introduced, being laid upon the peritoneum. The rectus muscle and the edge of the oblique muscles were drawn over the margins of the filigree and brought as closely into apposition as possible. This was only possible by the exercise of considerable tension, and even then the muscles were only approximated at the actual points of suture. Finally, the aponeuroses were closed over the muscles and the skin incision was closed by the use of Michel's clips. Convalescence was uninterrupted and since then the patient has never worn anything in the shape of a belt or binder. She tells me that she is in perfect health and that, in her own words, she is "beltless and bandageless, and it is a joy to live in comfort again." When I last saw her the abdominal cicatrix was firm and hard; no amount of straining affected it; there was no sensation of discomfort from the presence of the filigree.

CASE 2.—The patient was a woman, aged 21 years. She had been admitted to Guy's Hospital seven years previously, having been crushed between a wall and the tailboard of a cart. Her symptoms suggested the occurrence of internal hæmorrhage, and a few hours after admission her abdomen was opened by a six-inch incision above the umbilicus. No hæmorrhage was found, but there was an extensive condition of tuberculous peritonitis with ascites. For this reason a drainage tube was placed in the wound. Five days later, during a fit of coughing she ruptured the stitches above and below the tube and some coils of bowel appeared; these were washed and returned and the wound was closed by complete suture. Primary union resulted and the patient was discharged well in the course of a month. Soon after that time she began to notice that the wound was bulging and this it continued to do, becoming gradually larger. During the six months previous to her visit to me the hernia had progressed rapidly owing to her commencement of domestic service. I first saw her in the autumn of last year; she then had a well-developed epigastric hernia, the gap measuring 4 inches wide by 5 inches in length. Many adhesions could be felt in the sac and the patient suffered much from retching and actual sickness during her work and complained of griping pain in the region of the stomach on attempting to lift any weight. She was of spare build but looked healthy and of fair muscular development.

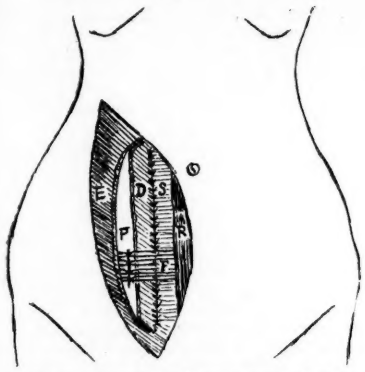
On Nov. 23rd, 1906, I opened the abdomen by a seven-inch incision below the ensiform cartilage, removing all the cutaneous scar. No sign of tubercle was to be seen but the resulting adhesions were numerous and very dense, involving the stomach and transverse colon. Some omentum was found adherent to the sac and was removed. These adhesions were divided and the abdominal contents were returned. I did not attempt to place the filigree in this case on the peritoneum owing to its densely adherent condition, which would have made any attempt to strip it from the fascia a source of oozing. In such cases I prefer to place it between the rectus muscle and its posterior sheath. I therefore split the adjacent margins of the rectus sheath to the full length of the incision, and dividing the linea transversa in front of and behind the muscles, drew the latter from their sheaths. The peritoneum and posterior rectus sheath being inseparable were closed in one layer, a portion of the sac being utilised on either side to make up the deficiency and to render closure possible. Upon this the filigree, measuring 6½ inches by 3 inches, was placed, and the muscles were then with some difficulty closed over it. The anterior layer of the sheath was united to its fellow separately and the skin incision was closed as in the last case. Recovery was uneventful and the patient remains at the present time in perfect health and comfort, retching, vomiting, and pain having ceased from the time of the operation. The epigastric region is firm and flat.

CASE 3.—The third case is that of a woman, aged 36 years, who was transferred to my care in the Hospital for Women in January, 1906. Three weeks previously she had undergone operation for a large and densely adherent cyst of the right broad ligament. At the time of her transference she had developed a firm, tender swelling in the right inguinal and iliac regions with some œdema over it, and a temperature of 103° F. This swelling was clearly due to pus and was thought to be the result of pelvic infection. I therefore opened it close to the anterior superior spine of the ilium and evacuated a large quantity of thin pus. On the next day nothing but pure urine came from the wound, and it was then clear that the abscess was in the ureter, which had been unfortunately ligated. A few days later, therefore, I opened the abdomen, after sealing off the incision, internal to the linea semilunaris, and endeavoured to find the end of the ureter by tracing it from above the pelvic brim. This was found to be impossible on account of the density of the adhesions, and in separating some of these fæcal matter appeared in the wound in the vicinity of the cæcum. I accordingly abandoned the attempt, and having passed a large tube down to the site of extravasation and plugged it about with gauze, turned the patient over and removed the kidney through the loin. In a few days a gangrenous patch appeared about the drainage-tube in the abdomen, and gradually an area of about the size of a five-shilling piece sloughed out, including all structures down to the peritoneum. Although at this time the patient was extremely ill and was thought to be dying she showed wonderful vitality and gradually recovered, all her wounds being healed at the end of ten weeks.

In January of this year she returned to me at the Hospital for Women with one of the largest ventral herniæ I have ever seen, at the site of the gangrenous patch already mentioned. She had grown stout since her discharge, and the appearance of the mass, covered as it was by feeble-looking cicatricial skin, was sufficient to put any ordinary form of operative treatment quite out of court. She was in constant pain with attacks of severe dragging colic attended by violent retching and sometimes by actual vomiting. She begged that something might be done for her and readily consented to the proposal that the attempt to implant a filigree should be made. As far as could be judged through her stout abdominal wall the fibro-muscular edges of the gap inclosed an area of about 7 inches by 4 inches. A filigree was therefore constructed for me by Messrs. Down Bros. measuring 8 inches by 4 inches, and on Jan. 19th, Dr. Maynard Horne acting as my anæsthetist, I proceeded as in the first case to excise the cicatrix by an elliptical incision 11 inches in length. On opening the abdomen at the upper end of the incision and introducing the finger for exploration the cæcum was found to be adherent to the sac and to a large mass of omentum weighing about 1½ pounds which was subsequently excised. I found it quite impossible to free the peritoneum from the aponeurosis of the external oblique muscle or from the posterior sheath of the rectus, and was therefore met by the difficulty of forming a bed for the filigree and finding material with which to cover it over. I accordingly employed a method which I had not attempted before. This consisted in incising the margin of attachment of the external oblique muscles to its aponeurosis for a distance of eight inches so as to expose the muscular fibres. This permitted of the detached aponeurosis being drawn inwards sufficiently to meet the posterior sheath of the rectus (Fig. 1), to which it was then sutured. The incision in the aponeurosis was thus converted into an ellipse which was floored by the peritoneum which was stripped from the posterior surface of the oblique muscles. A bed being thus provided for the filigree the latter was introduced so as to lie with its inner loops on the posterior sheath of the rectus muscle and the divorced aponeurosis of the oblique muscle, and its midrib and outer loops on the peritoneum forming the floor of the ellipse above mentioned. The rectus muscle was then brought out of its sheath from the outer side and in its whole width was transplanted outwards so as to meet the cut margin of the oblique muscles from which the aponeurosis had been divorced. This provided covering for the inner two-thirds of the filigree, while the outer third was covered by the inner margin of the oblique muscles. The rectus muscle was with difficulty sutured to this margin with stout catgut sutures passed at some distance from the muscular edges. The transplantation of the rectus muscle I then found had left an elliptical weak spot between itself and the left rectus, since the former was shrunken and partly atrophic;

to close this I opened the left rectus sheath and drew over the muscle of the left side across the middle line and sutured it there. The operation was finally completed by closing the skin incision by means of 35 Michel's clips, no aponeurotic tissue being available for covering the muscles. The operation lasted over two hours and was, I may say, of unusual

FIG. 1.

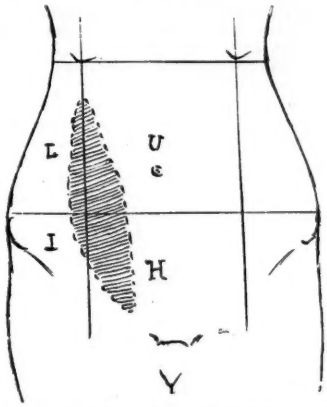


D, Divorced strip of external oblique aponeurosis sutured to (S) posterior sheath of rectus muscle. E, External oblique muscle. R, Rectus muscle. P, Peritoneum covered actually in whole area, shown by F, Filigree, a portion only of which is here shown diagrammatically *in situ*.

difficulty. The result has been extremely gratifying; the wound healed by first intention, and at the present time the patient is in excellent health, her abdominal wall being firm and resistant.

CASE 4.—The last case is even more striking than the above. In 1904 a young woman, aged 22 years, was admitted to Guy's Hospital, under the care of Mr. W. Arbuthnot Lane, for gangrenous appendicitis and general suppurative peritonitis. The abdomen was opened over the appendix and in the middle line above the pubes. These wounds were left open for drainage, and as the patient gradually recovered they were sutured four days later. Shortly after this there was a rise of temperature, and fæcal matter appeared on the dressings over the appendical wound, and from this time there was a complete fæcal fistula of the small intestine. From the character of the excreta it appeared that the fistula was high up in the bowel, and the girl began to waste rapidly. At this time she came under the care of Sir Alfred Fripp. Four attempts were made by suture to close the fistula without success, and finally, when her condition was of the gravest, a complete enterectomy, involving removal of six inches of the intestine, was performed and an end-to-end anastomosis successfully carried out. The patient now gradually recovered and was eventually discharged. Six months later she was again admitted to hospital, under the care of Mr. Lane, for a very large ventral hernia at the site of the appendical cicatrix. The sac was excised and the abdominal muscles approximated, but the gap appears to have been too great, for the hernia quickly reappeared and this time it assumed much larger proportions than before. She was again seen by Sir Alfred Fripp, who kindly sent her to me for submission to operation by filigree implantation; as he considered that any other method of treatment was out of the question. On examining her I found a hernia of really gigantic proportions, occupying a considerable part of the right lumbar, right inguinal, umbilical, and hypogastric areas of the abdomen (Fig. 2), and passing from two inches below the tip of the tenth rib, obliquely downwards and inwards to an inch above the pubic spine. The length of the actual gap was 7½ inches and its width 4½ inches. Coils of adherent bowel could be seen in the sac, and peristalsis was clearly visible through the thinned out and pigmented cicatrix. The entire hand placed flat upon the scar could be passed straight into the abdomen. The patient told me that from time to time she was seized with attacks of acute agonising pain in the abdomen, accompanied by sickness, and that her life was in that condition insupportable. In considering whether such a case came within the limits of justifiable surgery I was influenced in my decision by several points. The girl was apparently in the best of health otherwise; she was dependent entirely on her work for her living; her life was, as above stated, wretched; the control of the hernia was beyond the scope of any form of belt or truss; the future state of the hernia was likely to be one of rapid progress; the cases of filigree-implantation I had already attempted had been uniformly successful; and finally, there was the extraordinary vitality of the girl as shown by her previous surgical history. In these circumstances I agreed to attempt the cure of her condition.

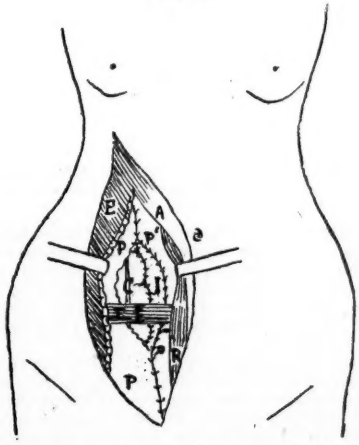
FIG. 2.



The shaded portion in this diagram represents the area of the hernial protrusion in Case 4.

The patient was admitted to the *Dreadnought* Hospital, Greenwich, in January of this year and on the 22nd, Dr. Cecil H. M. Hughes being the anæsthetist, I removed the entire cutaneous cicatrix by an ellipse measuring 13 inches by 3 inches. In doing this, as I had anticipated, the peritoneal cavity was opened about the centre of the wound. The abdomen was opened again, as in the other cases, at the extreme upper limit of the wound and with the finger as a

FIG. 3.

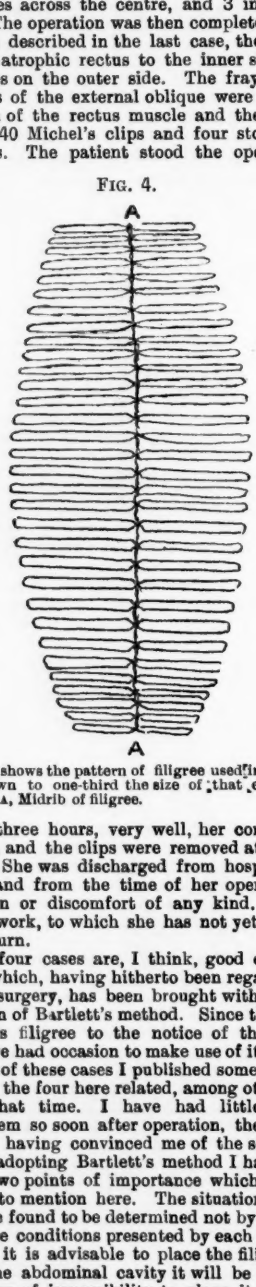


R, Rectus muscle partly covered by A, representing oblique aponeurosis and anterior sheath of rectus muscle. E, External oblique muscle. C, Cæcum sutured on inner side to small intestine (I), and adherent on outer side to P, peritoneum. P', Conjoined peritoneum and posterior sheath of rectus muscle sutured to small intestine (I). F, Portion only of filigree shown *in situ*.

guide the peritoneum was laid open in the whole length, keeping to the umbilical side of the mass of adhesions which was glued to the right side of the incision. At the end of an hour I had succeeded in separating by dissection the greater portion of the adhesions between the ileum, omentum, colon, and abdominal wall, although much had to be left undone as unjustifiably dangerous. An attempt to strip

the peritoneum from the posterior surface of the abdominal wall resulted in so much tearing that a large portion of it was rendered quite useless for the purpose of carrying a filigree, a gap measuring 3 inches by 1½ inches remaining patent. As the omentum was not long enough to reach beyond the upper portion of the wound, into which it might otherwise have been sutured, I chose the strongest loop of small intestine in the vicinity of the gap and drew it into the latter, suturing it on the outer side to the inner margin of the cæcum which was adherent to the peritoneum (Fig. 3) and on the inner side to the outer margin of the conjoined peritoneum and posterior sheath of the rectus muscle. Upon this patchwork of peritoneum, intestine, and fascia the filigree was placed; it measured 9 inches in length, 4 inches across the centre, and 3 inches at either end (Fig. 4). The operation was then completed in a manner similar to that described in the last case, the filigree being covered by the atrophic rectus to the inner side and by the oblique muscles on the outer side. The frayed remains of the aponeurosis of the external oblique were united to the anterior sheath of the rectus muscle and the skin incision was closed by 40 Michel's clips and four stout salmon-gut tension sutures. The patient stood the operation, which

FIG. 4.



The diagram shows the pattern of filigree used in these cases and is drawn to one-third the size of that employed in Case 4. A A, Midrib of filigree.

lasted nearly three hours, very well, her convalescence was uninterrupted, and the clips were removed at the end of the seventh day. She was discharged from hospital at the end of six weeks and from the time of her operation has been free from pain or discomfort of any kind. She declares herself fit for work, to which she has not yet, however, been allowed to return.

The above four cases are, I think, good examples of the class of case which, having hitherto been regarded as beyond the power of surgery, has been brought within our grasp by the application of Bartlett's method. Since this surgeon first introduced his filigree to the notice of the profession in America I have had occasion to make use of it in over a dozen cases. Seven of these cases I published some time ago in the *Practitioner*; the four here related, among others, have been done since that time. I have had little hesitation in publishing them so soon after operation, the results of my earliest cases having convinced me of the soundness of the method. In adopting Bartlett's method I have been struck with one or two points of importance which it may not be out of place to mention here. The situation of the filigree will usually be found to be determined not by any stereotyped rule but by the conditions presented by each individual case, and although it is advisable to place the filigree as close as possible to the abdominal cavity it will be found to be at times a matter of impossibility to place it actually on the peritoneum. I have elsewhere drawn attention to the firm adhesions which often exist between this structure and the transversalis fascia in cases of old-standing umbilical hernia and in some cases of ventral hernia following operation or accidental trauma. The attempt to separate these structures in such cases in order to lay the filigree upon the peritoneum results in the tearing of holes in the latter and in most troublesome and persistent oozing. Time is thus lost, shock is increased, and suppuration is favoured. There exist other situations in which a filigree may be implanted. In the case of median hernia above the umbilicus, or in umbilical hernia and for two inches lower down than the umbilicus, the space between the rectus muscles and their posterior sheaths is admirably suited to the purpose. The separation of these structures is a very simple matter; there is little oozing to endanger the union of the wound and the bed so formed for the filigree is firm and resistant.

In the case of hernia following appendicectomy, or other operation through the lateral wall of the abdomen, the difficulty of forming a bed for the filigree may be very considerable. It will arise where there is a deficiency of peritoneum with which to close the abdomen, either from tearing of holes in the attempt to strip or from cutting out of sutures where the tension is great. This difficulty may be met in one of three different ways. First, the omentum, if it is long enough and not widely adherent, may be sutured into the gap and the filigree laid upon it. Secondly, where this is impossible the intestines themselves, if in good condition, and especially if more or less adherent to each other already, may be utilised, as in my fourth case, to close the gap. This method is, of course, only admissible as a last resource when no other method is available, and must be carried out with the greatest care lest the whole operation be rendered impossible by puncturing the bowel. Thirdly, where there is no lack of material but the peritoneum is so densely adherent to the fascia of the abdomen as to be inseparable, an incision may be made along the margin of attachment of the external oblique muscle to its aponeurosis down to the peritoneum, as shown in Fig. 1. The portion internal to this incision is isolated from the remainder of the aponeurosis by carrying the upper and lower ends of the incision inwards towards the middle line. It will then be found that the peritoneum can be stripped away from the oblique muscles, so that this peritoneo-fascial strip can then be made to meet the outer edge of the posterior sheath of the rectus muscle which is probably also inseparable from its peritoneum. The filigree can now be laid upon this bed and with a little care the rectus muscle can be drawn from its sheath and transplanted outwards so as to meet the edge of the external oblique muscle which has been laid bare by the divorce from its aponeurosis and which will serve to cover the outer loops of the filigree.

The first of these methods I have not had occasion to use; the latter two I devised to meet the requirements of the last two cases of the series. Recently I have found occasion to modify slightly the shape of the filigree originally described by Bartlett. As in all hernial gaps the widest part is usually the most central, it is clear that defence is more essential here than at either end; there is, therefore, little to be gained by making the filigree the same width throughout its whole length; and as there is often considerable difficulty in getting the corners of a large oblong filigree fitted underneath the muscles at the extreme ends of the incision, I now have all filigrees made for me for abdominal herniæ constructed as in the last case described—i.e., with ends slightly narrower than the measurement across the centre. For the sake of uniformity all are constructed, whether for inguinal, umbilical, or ventral hernia, of the same gauge of wire—viz., No. 28 standard wire gauge, and have the same number of loops to the inch—viz., eight. In conclusion, I desire, as the introducer of Bartlett's method into this country, to state my belief that in it we have the simplest, quickest, and surest means yet devised of commanding cases of hernia of all varieties (with the possible exception of femoral hernia) hitherto considered incurable.

For the accompanying diagrams I am indebted to the pen of Dr. Ernest T. Jensen.

Mansfield-street, W.

ROYAL UNITED HOSPITAL, BATH.—The Mayor of Bath (Mr. S. Bush) has for some time been making strenuous efforts to free the Royal United Hospital in that city from a debt of £6124, and he received a munificent offer of £1000 from Mr. Overton Wills provided that the further sum of £5000 was subscribed. On Nov. 8th the amount in question was raised and the hospital is now free from debt.

THE TREATMENT OF BACTERIAL INFECTIONS BY VACCINES.

By GEORGE T. WESTERN, M.A., M.D., B.C. CANTAB.

(*From the Inoculation Department of the London Hospital.*)

(*Concluded from p. 1379.*)

Lupus of the mucous membranes.—Turning to lupus of the mucous membranes of the nose, larynx, and pharynx cases may be divided into those which are acute and those which are chronic. We have had only one of the former under treatment and at present have noted no improvement. The chronic cases, on the other hand, in the majority of instances, show marked improvement and in some cases apparent cure. These cases are, however, very prone to relapse and it is probable that treatment should be continued for some considerable period after all macroscopic evidence of disease has disappeared.

CASE 39.—A man, aged 38 years, was referred to the London Hospital in December, 1905. He had then had lupus of the soft palate for two years. X rays, the cautery, and scraping had all been tried without effect; in fact, when transferred, perforation was feared. The lesions consisted of several small localised ulcers on the soft palate and on either side of the uvula. The opsonic index had been estimated in December, 1904, by Dr. W. Bulloch when it was found to be 0·7. On Dec. 20th, 1905, the reading was 0·73. Tuberculin was then given commencing with $\frac{1}{1000}$th of a milligramme and later dropping to $\frac{1}{1500}$th of a milligramme. On Jan 31st, 1906, the ulcers had healed. Treatment was continued regularly until the end of April. In July, 1906, there was a recurrence, two small ulcers occurring on either side of the soft palate. Treatment was recommenced and in six weeks the ulcers had completely healed. Since then an occasional injection has been given and no relapse has occurred.

CASE 133.—A woman, aged 29 years, came to the hospital in 1903 with lupus affecting the soft palate and posterior part of the hard palate. She was treated with arsenic, and iodine was applied locally at intervals for three years. In October, 1906, there was a large area on the soft and hard palate, which showed active disease. There was a considerable amount of pain, as well as much purulent discharge. She was found to have an opsonic index of 0·85 Inoculations were commenced. In November the pain was much diminished and the discharge ceased. Since then improvement has been continued and steady and a considerable portion of the disease has now healed.

Tuberculous ulceration of subcutaneous tissues and skin.—It has been pointed out by Sir A. E. Wright[23] that "the clearest and most unfallacious evidence of the advantages which can be derived from the therapeutic inoculation of tubercle vaccine can be furnished in connexion with tubercular ulceration of the subcutaneous tissues." We have had a series of eight cases falling into this class, all of which have given uniformly satisfactory results. Each of these cases, it should be noted, was of great chronicity and had resisted treatment for periods varying from two to 22 years. An occasional injection of staphylococcus vaccine is often a valuable addition in these cases. The following are typical cases of this group.

CASE 45.—A boy, aged 12 years, came to the hospital for inoculation in January, 1906. Six years previously he had had tuberculous disease of the second right metatarsal. The distal end of this was excised, together with the phalanges of that toe. There had been a sinus for some time after this operation, and around this sinus a large ulcerated area, extending on to the dorsal and plantar aspect of the foot. When he came to the hospital there was no sinus and the radiograph showed no diseased bone, but the area of ulceration persisted. His opsonic index was 0·9. Tuberculin, with an occasional injection of staphylococcus vaccine, was used, and in April, 1906, the ulcerated area had completely healed. In September, 1906, there had been no recurrence. Since then nothing further has been seen of him.

CASE 181.—The patient was a girl, aged 15 years, who came to the hospital in January, 1907. Two years previously she had had a "pimple" on the right forearm which had broken and had spread gradually. In January, 1907, there was an ulcer on the flexor aspect of the forearm about three inches long and two inches wide. The edges showed red nodules in the skin as if the ulcer was spreading. The floor was clean and showed some granulations. The base was not thickened. The opsonic index was 0·74. Inoculation treatment was commenced. In May the ulcer had completely healed over and there has been no recurrence.

Erythema induratum.—Acting on the supposition that erythema induratum is of tuberculous origin, we have had two cases under treatment with tubercle vaccine (see Cases 88 and 176). Two such cases treated with tuberculin have also been reported by Dr. A. Whitfield.[24] It should be noted that in both the cases recorded the patients' occupation involved much standing and it was not possible to combine rest with the feet up and inoculation treatment.

CASE 88.—A girl, aged 18 years, came under treatment in May, 1906. She then had pigmented indurated areas above both ankles which she said had been present for two years. There was no ulceration and there was no history of syphilis. The areas became painful on prolonged standing. Her tuberculo-opsonic index was 0·8. Treatment with tuberculin was commenced on May 17th. Improvement was marked from the first. The pain ceased and the induration disappeared. In November there were only pigmented areas remaining and the general health was much improved. It should also be mentioned that her occupation entailed long hours of standing, which she was unable to avoid.

CASE 176.—A young woman came under treatment in December, 1906. She had had indurated pigmented patches about both ankles for two years. There was some ulceration. There was no history of syphilis. Smears of pus from the ulcers showed only a few staphylococci. Her occupation involved long hours of standing which she was unable to avoid. Her opsonic index was 1·0. Tuberculin was given. There was no noticeable alteration for the first two months. Since then, however, improvement has been marked, the ulceration has entirely disappeared, and the induration is hardly noticeable.

Tuberculous infection of lymphatic glands, &c.—Passing on to the second type of infection, it is proposed to discuss the treatment of tuberculous lymphatic channels and glands. We have had under treatment 40 cases, of which ten ceased to attend early in treatment. We are unable to report such unqualified success as was reported by Sir A. E. Wright in the article already mentioned.[25] This may perhaps be accounted for in part by the fact that, with a few exceptions, the cases have not been referred to the inoculation department until caseation and liquefaction of the caseous masses had occurred, while in most instances these tuberculous abscesses had already burst through the skin and were discharging by highly contaminated sinuses. Of the eight cases which had not broken down previously to coming under vaccine treatment four were instances of recurrence after one or more operations for removal of the glands. The glands of five of these eight cases have cleared up entirely. The other three are still under treatment and the glands are rapidly diminishing in size. Of the remaining 22 cases the glands in eight have entirely cleared up. These include both cases which were discharging by sinuses and also some which although broken down had not burst through the skin. Of the 30 cases which have attended for treatment regularly four show no improvement at all. (See Case 32.)

It will be well here to indicate a line of treatment which we have found successful in several cases where a tuberculous gland has broken down and formed a definite localised fluctuating abscess but has not penetrated the skin. Having given a preliminary inoculation and satisfied ourselves that the tuberculo-opsonic index is at or above the normal line, a fine sharp-pointed tenotome is passed through the healthy skin into the subcutaneous tissue at the side of the abscess and from there the abscess wall is pierced. The broken-down tuberculous material is then squeezed out along the track of the tenotome and the abscess thus emptied The result of this procedure is that the abscess walls are flushed through with fresh blood fluids containing a large quantity of protective substances. This process may if necessary be repeated after a week or so. In suitable cases we have found this treatment to be followed by rapid absorption of the thick wall surrounding these abscesses (see Case 164). The preliminary inoculation prevents the growth of bacilli in the track of the tenotome. The advantages of this method over that commonly resorted to of incising and scraping the abscess and sewing up again are: (1) that no anæsthetic is required; (2) that no dressing is required after 24 hours; (3) that no scar is left; (4) that the patient need not lie up; and (5) that no sinus remains. The general conclusions to be drawn from the cases treated are therefore the following: (1) early cases—i.e., cases where there is enlargement of the glands but where caseation is not extensive and liquefaction has not commenced—give highly satisfactory results; (2) where there is much caseation complete absorption may take place in some cases but the process takes many months; (3) where there is an abscess it should be evacuated; and (4) where there is a sinus progress is slow but with continued treatment good results may be obtained. The sinus should be examined for other micro-organisms which may be hindering progress. When such are found they should be dealt with by inoculating with a corresponding vaccine. Typical cases of the groups mentioned are recorded below (Cases 32, 49, 131, and 164). One case of tuberculous infection of the lymphatic channels is also recorded (Case 171).

CASE 32.—A girl, aged 11 years, was referred to the hospital in November, 1905. She had then many hard discrete glands on either side of the neck in the anterior and posterior triangles. There was not much periadenitis. These glands had been present for two years. Inoculation treatment was carried out for six months. There was

[23] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxv., 1905.

[24] Transactions of the Royal Medical and Chirurgical Society, vol. lxxxv., 1905.

[25] THE LANCET, July 5th, 1902, p. 11.

marked improvement in her general health but no change was observed in the glands. One gland was removed for examination and tubercle bacilli were found in it. In January, 1907, she was again seen and still no alteration could be observed.

CASE 49.—A woman, aged 35 years, came for treatment in January, 1906. She had a tuberculous gland removed from the submental area one year previously. It had now recurred in the same position. The gland was of about the size of a cob nut. It had not broken down. Inoculation treatment was carried out for three months, at the end of which time the gland was no longer palpable.

CASE 131.—A child, aged one year, was brought to the hospital in October, 1906. The history given was as follows. The child had had enlarged glands in the posterior triangle of the neck on the right side for six months. Four months previously they had broken down. A month later they were scraped. There had been no improvement. The condition just before inoculation commenced was as follows. There were enlarged glands in the posterior triangle; the glands were matted together and were discharging pus by two sinuses. The tuberculo-opsonic index was 0·56. Cultures from the sinuses grew staphylococcus albus pure. The staphylo-opsonic index was 1·0. Great improvement followed the use of tuberculin, but the sinuses for some time reopened from time to time. A staphylococcus vaccine was then used in conjunction with tuberculin, with the result that the glands entirely disappeared and the sinuses healed.

CASE 164.—A woman, aged 30 years, came to the hospital in November, 1906, and gave the following history. Three or four years previously a lump formed on the left side of the neck. It was hard until a week ago when it softened and became red. On examination there was a fluctuating swelling of the size of a Tangerine orange at the anterior border of the trapezius muscle on the left side. The skin over the swelling was red and appeared as if it would break down. An inoculation of tuberculin was given at once, and at the same time the abscess was emptied in the manner described above. A week later the abscess was emptied a second time. Inoculations were continued for two months, at the end of which time the abscess wall had been completely absorbed. In March, 1907, a gland again became palpable about the same region. This gland has been (May, 1907) almost entirely absorbed again.

CASE 171.—A woman, aged 45 years, was admitted to hospital in November, 1906. Her history was that seven years previously she had had a pimple on her thumb, which had persisted for some months. Lumps had next appeared under the skin in the line of the lymphatics up the arm and in the axilla. These had burst and septic infection had followed. She had been in hospital many times to have abscesses in the arm incised and now had come in again for amputation at the shoulder. The arm then from the wrist to the shoulder was very œdematous. There were many incisions and tubes had been inserted in several directions. There were large granulomatous masses and ulcers at intervals. In the axilla was a large painful mass of glands. There was also a small ulcer on the right forearm. The tuberculo-opsonic index was 0·7. Improvement was very marked a fortnight after the first injection of tuberculin. After three weeks she volunteered the information that she was free from pain for the first time for three years. A month after the commencement of treatment the arm had almost healed but there was still a mass of enlarged glands in the axilla. A staphylococcus vaccine was now added with the result that the axillary glands rapidly diminished in size. Three months after inoculation treatment was commenced she was discharged cured and with free use of her arm. Up to the present there has been no recurrence.

In the third group—namely, infections of various tissues through the blood stream—cases will be divided into those of: (1) tuberculous disease of bones; (2) of joints and synovial sheaths; (3) of the epididymis; and (4) of the bladder.

Tuberculous disease of bones.—Of this group 20 cases have come under treatment in which five of the patients ceased to attend after having had one or two injections. Of the remaining 15 seven are cured and show at present no signs of active disease. These include three cases of dactylitis and one each of diseased sternum, rib, mastoid, and acetabulum. This last was a particularly satisfactory case, being one in which amputation at the hip had been done for the disease of the joint but was followed by persisting sinuses leading down to diseased bone, the condition lasting in all about six years. After six months' treatment the sinuses closed and the patient has remained well since (15 months). Five cases show marked improvement and are still under treatment. These include two cases of mastoid disease, two of spinal disease, and one of diseased tibia. Three cases have shown no improvement under inoculation treatment.

Tuberculous disease of joints and synovial sheaths.—We have had under treatment 17 cases of tuberculous disease of joints and synovial sheaths. Of these, six patients ceased to attend before treatment had been in progress for one month. Of the remaining 11 cases seven are either completely cured or show very great improvement, two show no improvement, and two show slight improvement. The two cases showing no improvement are both cases of senile tuberculosis in patients over 60 years of age. The ordinary treatment with splints or plaster has been carried out in conjunction with inoculations, and in a few cases Bier's method of passive congestion has been added with apparent benefit. Inoculation treatment of joints and tendon sheaths is, therefore, in our experience, attended by good results, especially in young subjects and in early cases; and given such conditions a cure and good movement may be expected. Where there is much destruction of tissue and sinuses are present progress is slow and movement will probably be considerably limited. Illustrative cases are given below (see Cases 72 and 153):—

CASE 72.—A boy, aged six years, came to the hospital in April, 1906. Two years ago he had complained of pain in the knee. Tuberculous arthritis was diagnosed and a Thomas splint was ordered and was worn without any improvement. In April, 1906, the knee was swollen and the synovial membrane was thickened. There was pain on movement of the joint. There was a daily variation of temperature from 98° to 102° F. There was much sweating at night. The tuberculo-opsonic index was 0·8. Inoculations were commenced on April 4th. On May 19th the pain had ceased. There was no daily rise of temperature. The night sweats had ceased. In December the synovial membrane could still be felt to be slightly thickened. There was free movement of the joint to a right angle. There was great improvement in general health.

CASE 153.—A girl, aged 15 years, came for treatment in November, 1906. In 1899 tuberculous arthritis of the right knee had been diagnosed and a Thomas splint had been worn ever since. The knee was said to be improving. The condition in November, 1906, as noted by the surgeon in charge, was, swelling of the knee, thickening of the synovial membrane, and some pain in the joint. Inoculations were commenced on Nov. 9th. Now (May, 1907) the knee appears normal, there is no pain or local swelling. Movement can be carried out within 30°. The splint has been discontinued.

Tuberculous disease of epididymis.—Amongst the cases of tuberculous epididymis we have had some very successful results both in cases where the disease was broken down and discharging by sinuses, and in those where liquefaction had not taken place. In all, 19 patients have been advised to undergo treatment. Of these four only attended once and were then lost sight of. Of the remaining 15, six are cured after having undergone periods of treatment ranging from three to nine months. Four are greatly improved, their sinuses have healed, and two of these, although still showing evidence of disease, have been able to go abroad. Two have only as yet been attending for two months, but already show considerable improvement; in one the sinuses are nearly closed and in the other the local swelling and pain are much less marked. Of the remaining three, two have only attended for one month and although not as yet showing much improvement are progressing favourably. The one other when treatment was commenced was already suffering from diffuse pulmonary tuberculosis. He attended for some time without any apparent benefit.

Tuberculous disease of the bladder.—Of tuberculous cystitis we are unable to speak with certainty of cures owing to the habits of hospital patients. We find that as soon as there is sufficient improvement to enable the patient to work for a few hours without passing urine attendance at hospital ceases. We have, however, seen cases in which on commencing attendance urine was being passed every 10 to 15 minutes two months' treatment has procured without discomfort an interval of two hours. In the few cases in which adequate treatment has been carried out good results have followed. These although insufficient in number to lead to definite conclusions indicate that in the future more satisfactory results may be obtained (see Case 89).

CASE 89.—A man, aged 48 years, was first taken ill two years ago with hæmaturia which had lasted for a few days and was followed soon after by a left orchitis. He remained well until 13 months ago when he again had an attack of hæmaturia, which also lasted a few days, and which was repeated once or twice during the course of the next month. During this time he had noticed that he passed blood at coitus and had been having frequency of micturition most marked at night, each act of micturition being preceded by pain in the penis. Examination with the cystoscope showed slight ulceration of the trigone. Tubercle bacilli were present in the urine. The prostate was hard and nodular. At this time (May 14th, 1906) his tuberculo-opsonic index was 0·78 and inoculation treatment was commenced. By December, 1906, he was completely free from all urinary symptoms, although the prostate still remained hard and nodular.

Infections with the Staphylococcus Pyogenes Albus and Aureus.

This group may conveniently be divided as follows: (1) acne, vulgaris, indurata, and necrotica; (2) furunculosis; and (3) carbuncle.

Acne.—12 cases of acne have been under treatment and without exception have shown very striking improvement. Those cases where pus formation is a marked feature cease, after one or two inoculations, to form pus. Those cases where induration and thickening are the prominent features are more difficult to treat and more liable to relapse if treatment is prematurely discontinued. As was indicated in the discussion on the specificity of vaccines, these cases can in many instances be treated with a vaccine which has not been prepared especially for the individual case. In some of the more chronic cases of the indurated type, however, we have

found the best results to follow the use of a specially prepared vaccine.

CASE 128.—A woman, aged 28 years, came for treatment in October, 1906. She had suffered from extensive facial acne for 15 months. The condition was of the indurated variety, with occasionally some pus formation in addition. From some sero-purulent fluid, expressed from one of the indurated masses, staphylococcus albus was cultivated. Treatment with staphylococcus albus vaccine was carried out for two months with much improvement but there was a very marked tendency to relapse. A vaccine was then prepared from her own micro-organism. Treatment with this vaccine was followed by more rapid improvement and in April, 1907, the face was quite clear.

CASE 197.—A youth, aged 18 years, was admitted to hospital in January, 1907, with very extensive pustular acne all over the back and shoulders. This condition had been present for three months. Treatment by ointments and drugs had produced no improvement. Inoculations with a staphylococcus albus vaccine were commenced in February. There was a marked improvement in the condition following the first injection. After six weeks' treatment the back was clear except for many pigmented scars. There has been no relapse.

Furunculosis.—Nine cases of furunculosis have been treated by staphylococcus aureus vaccine. Four of these cases were of acute furunculosis occurring without any history of previous attacks. A complete and rapid cure was recorded in each case. Of the five remaining cases four were instances of recurrent attacks of acute boils extending over periods varying from one to five years. Treatment of these cases has in every instance been followed by completely satisfactory results. It is in these cases most satisfactory to prepare a special vaccine from the organism isolated from the patient's own pus. The remaining case was one of persistent chronic boils (see Case 61). In this instance also a cure was eventually obtained but only after somewhat prolonged treatment. This we take to be explained by the lack of acute inflammation in the neighbourhood of the foci of infection and consequent difficulty in obtaining an adequate determination of protective bodies.

CASE 61.—A man, aged 58 years, was referred to the inoculation department in March, 1905. He had suffered for 15 months from boils all over his back and shoulders. Many of them had been opened and scraped, but without any benefit. His condition in March, 1905, was as follows: "There is a carbuncle over the left scapula which has been recently opened and scraped. The back is covered with many boils. These boils show no surrounding acute inflammation. They are covered with dry crusts which on removal show thick creamy pus beneath them. There are many scars of old boils." The pus on cultural examination showed a pure growth of staphylococcus pyogenes aureus. The urine contained no sugar. There was no improvement noted on the administration of iodide of potassium. The opsonic index to staphylococcus aureus was 0·8. A staphylococcus vaccine was employed but no local treatment was given except frequent bathing in hot water. After one month's treatment the condition was much improved and when eight weeks had elapsed the boils ceased to appear. There has been no relapse.

CASE 234.—A man, aged 22 years, has suffered from boils at frequent intervals for seven years. On first attending the hospital he had a deep necrotic boil on the back of his neck and many scars indicating the positions of previous abscesses. A vaccine was prepared from a culture grown from his own pus. After two injections he was quite free from boils. A fortnight later he returned with another similar boil commencing. An inoculation was given at once and the boil completely aborted. He is still under observation.

Carbuncle.—I am fully cognisant of the fact that carbuncles treated by ordinary surgical methods usually heal with great rapidity and are generally very satisfactory cases. There are, however, some very marked exceptions to this rule. Without exception all our cases of carbuncles have been those which, in spite of repeated incisions, fomentations, and applications of pure carbolic acid, have shown no adequate attempt at repair or healing. These cases we have found invariably to make a rapid recovery when the protective mechanism is called into play by the inoculation of a staphylococcus vaccine. (See Cases 54 and 179.)

CASE 54.—A man, aged 43 years, came to the hospital with a carbuncle on the back of his neck. Two weeks previously it had been freely incised, scraped, and swabbed out with pure carbolic acid. There was not much discharge and little attempt at healing. An inoculation of staphylococcus aureus vaccine was followed by rapid healing.

CASE 179.—The patient was a man, aged 60 years. When he came under observation he had had a carbuncle on the back of the neck for one month. Repeated free incisions had been made and carbolic acid and peroxide of hydrogen applied without any benefit. The condition then was described as follows: "A deep cavity at the back of the neck, measuring about three inches in either direction, lays bare the trapezius muscle The sheath of the trapezius has sloughed and the whole cavity is discharging copiously thick pus. There is a considerable amount of surrounding œdema. There is no attempt at granulation formation." Cultures of the pus grew staphylococcus aureus. An inoculation was given at once. Five days later the floor of the cavity was covered with healthy granulations and the œdema was much diminished. A second injection was given and was followed by a complete and uninterrupted recovery.

Infection with the Colon Bacillus.

Our experience of the treatment of infections with this micro-organism is limited to two cases of cystitis. In both cases the bacillus coli was isolated by plating out catheter specimens of urine and a vaccine prepared from the organism so obtained. The first case (Case 80) was treated 18 months ago. The patient was a man, aged 28 years, who had been suffering with cystitis for 15 months, during which time he had been treated with acid sodium phosphate, calomel, and urinary antiseptics without any benefit. His opsonic index to the organism isolated from his urine was 0·7. Inoculation treatment was carried out for three months, at the end of which time he was quite well and no colon bacilli could be found in his urine. There has been no recurrence. The second case (Case 143) was that of a woman, aged 45 years. She had suffered from cystitis for ten months. As she is still under treatment one cannot at present talk of a cure but the improvement which has already followed inoculation has been very marked.

Infection with the Pneumococcus of Fraenkel.

The cases which fall into the group are only two in number. Both are cases of a persistent sinus following the operation for the evacuation of an empyema. In the first case there had been a discharging sinus for four months since the date when a portion of the rib had been resected. The pneumococcus and staphylococcus aureus were isolated from the pus. The opsonic index to the former was 0·7, while to the latter it was 1·0. A vaccine was prepared from the pneumococcus culture and inoculation treatment commenced. Three weeks after the first inoculation the sinus had healed. In the second case there had been a sinus for two months. A similar line of treatment was followed, with the result that the sinus healed in two weeks.

Infection with the Streptococcus.

During 1906 we had under treatment two cases of ulcerative endocarditis. In both cases a streptococcus was isolated from the blood and from these cultures vaccines were prepared. Both of these cases terminated fatally. A post-mortem examination was obtained in one case and revealed a large mass of vegetations on the mitral valve. In the second case extensive thrombosis set in involving both legs and one arm. A post-mortem examination was not allowed. There was, however, in both cases sufficient temporary improvement in the condition to justify the supposition that in a favourable case a cure might be obtained. Such a case has recently been recorded.[26]

To summarise, we have found that in cases of lupus, both of the dry and ulcerated varieties, though particularly of the latter, treatment by inoculation has proved a very valuable adjunct to such other measures as procure a local hyperæmia; that out of 30 cases of enlarged tuberculous glands only four failed to show improvement, while 16 were completely cured, eight of which when sent to us were discharging from contaminated sinuses; that in the case of chronic tuberculous arthritis and in such topographically diverse affections as erythema induratum and tuberculous epididymitis the results have been almost uniformly satisfactory; that in affections of a non-tuberculous origin, those, such as acne, generalised furunculosis, and obstinate carbuncle, which have been treated with their appropriate vaccines, have cleared up with remarkable rapidity; while our narrower experiences of pneumococcal and bacillus coli infections are at any rate sufficiently significant to foreshadow the far wider fields that would now seem to be opening before a line of treatment that bids fair, at no distant period, to rank among the most potent weapons of future therapeutics.

In concluding, I wish to express my thanks to the various members of the surgical and medical staff of the London Hospital for their kind permission to make use of the cases which have been under their care; to Dr. W. Bulloch for valuable advice and suggestions in connexion with this work which has been carried out in his laboratory; and to Dr. A. H. MacDonald and Dr. J. D. C. White for much valuable assistance.

York-street, W.

[26] Sir James Barr, Dr. W. Blair Bell, and Captain S. R. Douglas, I.M.S.: THE LANCET, Feb. 23rd, 1907, p. 499.

THE INFANTS' HOSPITAL, WESTMINSTER.—A conference to discuss the question of establishing an outpatient department of a restricted and consultative character in connexion with the new Infants' Hospital, Vincent-square, Westminster, will be held in the lecture theatre of the hospital on Friday, Nov. 29th, at 4.30 P.M., Dr. F. J. Allan, medical officer of health of Westminster, in the chair.

FATAL INJURY TO THE BLADDER DURING AN OPERATION FOR FEMORAL HERNIA.

By W. H. CLAYTON-GREENE, M.B., B.C. CANTAB., F.R.C.S. ENG.,

SURGEON IN CHARGE OF OUT-PATIENTS TO ST. MARY'S HOSPITAL, PADDINGTON, W.; SURGEON TO THE FRENCH HOSPITAL, SHAFTESBURY-AVENUE, LONDON, W.C.

With a Note by EDMUND OWEN, *LL.D., M.B. Lond., F.R.C.S. Eng., Consulting Surgeon to St. Mary's Hospital, Paddington, W.*

As a considerable amount of attention has been directed recently toward cases of femoral hernia in which the bladder has been exposed or injured during operation, I think it well to forward the notes of a case with which I was concerned, though I was not the actual operator.

The patient, a married woman of spare frame, aged 47 years, and the mother of two children, had suffered for 23 years from a small femoral hernia on the right side. In October, 1901, the hernia became strangulated and a radical operation was performed for the relief of the condition. From that date to the time when further treatment was sought the patient had suffered from a constant dragging pain with occasional smarting in the region of the wound. There was a distinct bulging in the region of the femoral canal; no urinary symptoms were present. A second operation was performed on June 5th, 1902, and considerable difficulty was experienced in finding the sac; eventually it was distinguished, freed, twisted, and ligatured, and the crural canal was closed by a stitch. During the night the patient was restless but not in great pain. She took nourishment well but was sick several times. As she did not void urine naturally a catheter was passed and several ounces of normal urine were withdrawn. She did not seem well and during the next day (the 6th) she complained of pain in the right axillary region and she vomited during the afternoon. The catheter was passed in the evening and five ounces of normal urine were withdrawn. Towards night she became worse; the respirations grew shallow and hurried and there was severe pain in the epigastric region, spreading down the right and left sides. Dulness was found at each pulmonary base, with tubular breathing and friction sounds. A double basal pneumonia with diaphragmatic pleurisy were diagnosed. The abdomen was not distended and it moved well with respiration. There was tenderness over the epigastric region but not over the pelvis. During the night she began to hiccough. On the morning of the 7th she was worse and there was an extension of tubular breathing towards both axillæ. The respirations were 36 and the pulse was 140. Signs of fluid were detected at the right base. The urine had been drawn off at regular intervals and it was noticed that a very small amount was now being passed, so the question of bladder injury was raised. The urine was tested and was found to be full of urates, but the test for blood was negative. The abdomen was now distended, though it was still moving well; eight ounces of boric acid solution were injected into the bladder, one ounce only being returned. A few blood corpuscles were found on microscopical examination. It was now clear that the bladder had been injured and a further operation was suggested to her. This she declined, however, and she died during the early morning of the 8th.

At the post-mortem examination there was found a circular patch of necrosis in the bladder wall which lay about one inch from the neck of the sac. (The sac had been twisted.) There was general peritonitis, together with double pneumonia and a small right-sided empyema.

It is necesary to allude to one or two features of special interest in this case. There can be little doubt that the previous operation, by the removal of redundant sac, had caused a dragging on the bladder and had enticed it towards the hernial orifice. When the sac was twisted the bladder was, as it were, sucked into the vortex and surrounded by the ligature. It would therefore appear probable that injury to the bladder is more likely to occur in cases of recurrent femoral hernia and that the plan of twisting the neck of the sac is never devoid of danger.

The anomalous character of the symptoms are explained by the fact that, as the patient was put back to bed with the pelvis raised, the urine escaping from the bladder gravitated towards the under aspect of the diaphragm and produced a train of symptoms very different from those which might otherwise have been expected. How soon the bladder wall gave way we had no means of determining, but presumably within 24 hours of the operation urine had begun to track towards the diaphragm. The only symptom which should have directed attention to the bladder at an earlier date was the small quantity of urine that was being passed. As the thoracic symptoms were so pronounced it was at first concluded that the toxic effects of a double pneumonia were being exerted upon the kidneys and that there was partial suppression.

Note by Mr. EDMUND OWEN.—Since attending the meeting of the Medical Society of London on Oct. 28th, I have been enabled to refer to the *Thesis* on the subject of crural cystocele, which M. Morin laid before the Medical Faculty of Paris, 1897. In it he says that before operating on the hernia it is generally impracticable for the surgeon to make a correct diagnosis, but that even to have a suspicion of the possible presence of the bladder is a bit of good fortune, and that if during the operation the hernial sac seems to be unusually thick on the inner and hinder part, one ought at once to think of the bladder. M. Morin is probably right in believing that pregnancy has a good deal to do with the spreading of the bladder thinly over the back of the lower part of the front abdominal wall, and with encouraging a small pouch of it to wander through the crural opening. And if when such a thin-walled bladder is lying close against, or is adherent to, a hernial sac, the surgeon has the sac pulled forward in order that he may the more securely tie its neck, disaster is apt to happen. After hearing the discussion at the Medical Society, I am quite willing to fall in with Morin's conclusion that cases of crural cystocele are not of such uncommon occurrence as one might have believed And I am inclined to think that he may have some truth on his side when he says that there are certain surgeons who, when operating on a case which has turned out disastrously, dislike having their name associated therewith, and would strongly object to publishing the details of it, however useful they might prove to others. Such conduct shows a sad want of surgical courage. And, as one result of it, I should think that if anyone outside of our profession ever reads THE LANCET, he must put that journal down in the firm belief that every surgical patient gets well after being operated on, and that an operation is the one and only remedy. There is at the present day scarcely ever the suspicion of a black border around the report of surgical cases!

TREATMENT OF INNOCENT LARYNGEAL GROWTHS BY THE GALVANO-CAUTERY.

By ANDREW WYLIE, M.D., C.M. GLASG.,

ASSISTANT SURGEON, CENTRAL LONDON THROAT AND EAR HOSPITAL.

INNOCENT laryngeal growths, such as papillomata and fibromata, grow from any part of the larynx but are most commonly found attached to the cords and ventricular bands. The ordinary methods of treatment for such growths are to remove them by forceps, curettes, snares, galvano-cautery, caustics, or by external operation. One of the most popular methods is by means of laryngeal forceps, of which several different sizes, shapes, and patterns have been invented appropriate to variously situated growths. The forceps are specially suitable for sessile growths situated on the edge of the vocal cords; the snare is the instrument for pedunculated growths in the anterior commissure, while the galvano-cautery is very suitable for minute sessile growths situated on the mesial surface of the vocal cords or ventricular bands. Chemical caustics are not recommended and external operations are only performed when it is found impossible to remove the growths *per vias naturales*. The use of the forceps often causes injury to the surrounding parts of the larynx, especially when removing a small sessile growth, since they obstruct the view of the larynx and also are powerfully gripped by the glottic sphincters almost as soon as introduced. The galvano-cautery burner being thin and light can be guided and observed during the whole of the operation.

Most writers dismiss the treatment of benign growths

by the galvano-cautery with a few words, the brevity of their remarks proving how little this form of treatment is practised. The galvano-cautery has, however, been used by many laryngologists for the removal of growths in the larynx. Dr. J. Walker Downie published several successful cases.[1] Dr. J. Dundas Grant advocated its use for a vascular growth at a meeting of the British Laryngological Association in December, 1892, and at the British Medical Association at Oxford in 1904 he advised its use in certain laryngeal growths. McCoy (Philadelphia) advised the galvano-cautery even in sub-glottic growths.[2] Schmithuisen treated tuberculous growths by the galvano-cautery and published several successful cases.

One serious drawback to the exclusive or primary use of the galvano-cautery is that the growth cannot be microscopically examined, and the diagnosis rests solely on the laryngeal examination. The advantages of the galvano-cautery are: (1) that very minute growths can be obliterated and that, as far as experience shows, they do not return; (2) that small vascular growths can be removed without the risk of hæmorrhage; (3) that it is far superior to chemical caustics: the dangers of local reaction arising from chromic and lactic acid are always considerable; (4) that the technique is more reliable, more precise, and involves less risk of damage to adjacent structures; (5) that the whole operation is in view of the surgeon, which is not the case with forceps; (6) that by it small sessile growths on the mesial surface of the vocal cords are more thoroughly treated than by the forceps; (7) that the stumps of growths already removed by other instruments can be obliterated by the cautery; (8) the galvano-cautery cuts off the blood-supply and thus kills the growth, while the forceps often only removes the superficial parts; and (9) that it diminishes the liability of local infectivity of papillomata.

The instrument.—A very fine galvano-cautery point must be used. The handle should have a button which can be easily manipulated to control the intensity and duration of the current. The cautery should be inserted into the larynx cold, and only when the point is seen to be in direct contact with the growth should the current be applied and the point raised to a white heat. Messrs. Allen and Hanburys have made a cautery burner for me in which the laryngeal end is bent at right angles. The vertical or laryngeal portion is three inches long while the horizontal part is six inches. Further, it is attached to a handle so constructed that it does not obstruct the view of the larynx.

Preparation.—The patient should be directed to use the voice as little as possible for at least a week before operation, as there is always a certain amount of laryngitis present. The digestive organs should be attended to and the bowels regulated with hydrargyri subchlor. or other mercurial preparation. The preliminary drilling of a patient is most important. No operation should be attempted on the larynx until the patient has been drilled in the art of holding his tongue out, educated to breathe quietly and naturally, and to coöperate with the surgeon. Patients should also be taught to steady the larynx by holding it with their hands externally; this serves to concentrate the mind by giving the patient something to think of and something to do.

Operation.—It is essential to have a quiet room, plenty of time and patience, a good reflected light, and the pharynx and larynx thoroughly anæsthetised.

Anæsthesia.—This is a most important detail, for unless anæsthesia is thoroughly established the cautery point may touch undesirable parts of the larynx, owing to involuntary movement of the patient at the critical moment. I find hydrochlorate of cocaine the best local anæsthetic; its toxic effects are sometimes troublesome, but even a 5 per cent. freshly prepared solution injected into the larynx by Wingrave's syringe (a few drops allowed to trickle over the edge of the epiglottis) (Westerman) and allowed to remain for five minutes and then repeated before operation effects a thorough anæsthesia and rarely any toxic symptoms. I have used the salts of cocaine with equal parts of adrenalin and also a solution of the alkaloid of cocaine dissolved in olive oil, as recommended by Dr. V. H. Wyatt Wingrave,[3] with great success. This oily solution anæsthetises the tracheal mucous membrane and allays the irritating cough so troublesome in these operations. I find further that more complete control is insured by a preliminary spraying of a similar solution of cocaine on the fauces and laryngo-pharynx. These local anæsthetics cause anæmia and shrinking, so that the growths appear smaller than they did on the first inspection.

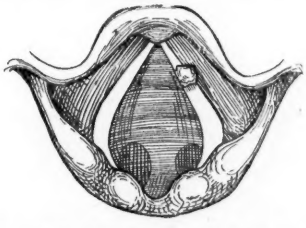
The laryngeal mirror is now held in the left hand and the cautery handle in the right. Under the guidance of the eye in the laryngeal mirror the cautery point is gently inserted and directed to the growth. At first it is better to touch it several times without applying any heat, then when the surgeon's hand and eye become coördinated the current is applied, the growth is cauterised, the current cut off, and the burner withdrawn. One firm touch, as a rule, is sufficient and the patient should have a rest for three or more days, repeating if necessary. A small slough is the result of the cautery, but this disappears in a few days if the larynx is kept absolutely quiet. No searing of the surrounding parts takes place as the current can be turned off at once should the patient move.

Subsequent treatment.—Absolute rest to the voice for week or two must be strictly adhered to. A mild diet must be given; all condiments or irritating articles of food must be excluded. Smoking, drinking, motoring, or even driving on a dusty road must be prohibited. Gargles must not be prescribed, but the nose, pharynx, and naso-pharynx must be kept aseptic and free from irritating discharges. Adenoids or any nasal or naso-pharyngeal affection should have been previously attended to.

The following short report of six cases illustrates the value and results of the galvano-cautery treatment in: (1) cauterising the remains of growths already removed; and (2) removing small sessile growths on the mesial surface of the glottis. The local inflammation which followed was not severe and only very slight œdema was present in one case.

CASE 1.—The patient, a female, aged 24 years, was first seen by me in August, 1904, suffering from hoarseness of four years' duration. On examination a distinct papilloma of about the size of a split pea was seen growing from the

FIG. 1.



mesial surface of the left vocal cord about the junction of the anterior and middle thirds (Fig. 1). This I removed by Whistler's forceps and Dr. Wyatt Wingrave reported it to be a squamous papilloma.[4] Six months later the patient again came complaining of hoarseness and on examination there was a slight recurrence of the growth. It was very small and I touched it twice with the galvano-cautery, allowing three days between the applications. There were a slight slough and inflammation for a fortnight but these soon disappeared and the patient has had no further trouble.

CASE 2.—A man, aged 50 years employed in a flour mill, consulted me in September, 1904, complaining of loss of

FIG. 2.

voice and slight difficulty in breathing. This had continued for several years, but was getting worse. On examination a

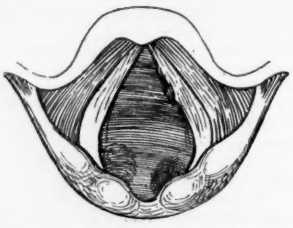
[1] Clinical Manual, Diseases of the Throat, 1894, p. 131.
[2] Medical News.
[3] Journal of Laryngology, December, 1900.

[4] No. 14, Wingrave's "Pathology of 50 Cases of Innocent Laryngeal Growths," Journal of Laryngology, May, 1906.

greyish, ragged-looking growth of about the size of a small pea was seen attached to the anterior commissure between and slightly below the vocal cords. (Fig. 2.) The growth was touched with the galvano-cautery, and although for a few days the patient was very hoarse this soon disappeared and his voice is now perfectly normal.[5]

CASE 3.—A man, aged 40 years, a fish hawker, consulted me in September, 1905, for hoarseness which had been persistent for 18 months. On examination a small sessile growth

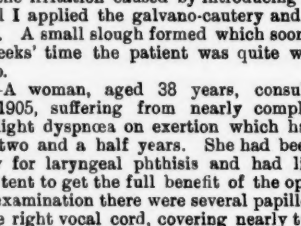
FIG. 3.



(resembling a fibroma) was seen attached to the edge of the left vocal cord about its centre. (Fig. 3.) It was so small that I failed to extract it with the laryngeal forceps. A week later when the irritation caused by introducing the forceps had subsided I applied the galvano-cautery and repeated it a week later. A small slough formed which soon healed and in a few weeks' time the patient was quite well and has continued so.

CASE 4.—A woman, aged 38 years, consulted me in December, 1905, suffering from nearly complete loss of voice and slight dyspnœa on exertion which had persisted for the last two and a half years. She had been treated in the country for laryngeal phthisis and had lived several months in a tent to get the full benefit of the open-air treatment. On examination there were several papillomata growing from the right vocal cord, covering nearly two-thirds of its length and projecting well into the rima glottidis. (Fig. 4.)

FIG. 4.



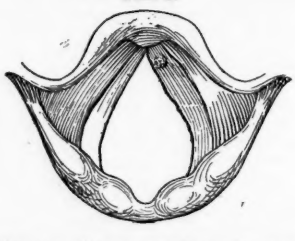
I removed several pieces with Grant's laryngeal forceps, and Dr. Wingrave reported it as squamous papilloma.[6] The stumps and pedicles of the papillomata were still present after removal by the forceps, and as the patient, although decidedly better, was still husky I touched each stump with the galvano-cautery. For several weeks there were severe pain, absence of voice, and slight difficulty in breathing owing to transient œdema, but these unfavourable symptoms gradually subsided, leaving the patient perfectly cured.

FIG. 5.

CASE 5.—A man, aged 27 years, a painter, consulted me eight months ago, complaining of hoarseness of two years' duration. On examination there was a small myxomatous-looking growth hanging from the left vocal cord at the junction of the anterior and middle thirds. (Fig. 5.) On trying to remove it with Grant's laryngeal forceps it collapsed, leaving an irregular "tag" on the vocal cord. I touched this with the galvano-cautery and the patient was quite well in a short time. He has continued so until the last few weeks, when on examining his larynx I noticed a recurrence of the original condition.

CASE 6.—The patient, a young lady being educated as a professional singer, was sent to me by her teacher. The patient complained of "thickness and hoarseness" on the slightest exertion in singing, notwithstanding that she had used all the ordinary remedies for laryngitis and had given the voice absolute rest for several weeks.

FIG. 6.



On examination a small very minute rough excrescence was seen on the upper surface of the reddened left vocal cord near the anterior end. (Fig. 6.) The right vocal cord was also red and swollen. On Jan. 7th this year I touched this projection with the cautery and advised my patient not to use her voice in any way for at least three weeks. At the beginning of February she was able to sing without exertion, and since Easter has continued her music lessons with no bad result.

In conclusion, I beg to submit that the galvano-cautery is a most successful form of treatment for small, simple fibromata, myxomata, and papillomata, since in addition to destroying the tissue *en masse* it cuts off the blood-supply and insures complete obliteration of the growth.

Harley-street, W.

[5] Case shown at the British Laryngological Society, March 10th, 1905.
[6] No. 21, Wingrave's "Pathology," Journal of Laryngology, May, 1906.

RECTAL CARCINOMA TREATED BY A MODIFICATION OF WITZEL'S COLOSTOMY AND THREE WEEKS LATER BY THE EXTIRPATION OF THE ENTIRE ORGAN BY THE VAGINAL ROUTE.

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EXCISION of the rectum by the vaginal route is not so frequently undertaken in this country at the present time as to be a familiar operation, although it possesses some important advantages both in the immediate and in the after results which proclaim it worthy of a greater recognition. Briefly it may be said that these advantages are: 1. The wide field of operation which is opened up by an incision through the vaginal wall and perineum. 2. The lesser degree of mutilation and shock caused by division of the soft parts only, compared with those operations which sever the bone. 3. The absence of any risks of osteomyelitis or necrosis supervening, with a corresponding reduction in the chances of pyæmic or septicæmic complications. 4. The speedier convalescence and comparatively small amount of scarring which results.

Tuttle, in his "Diseases of the Anus, Rectum, and Pelvic Colon," 1906 edition, p. 836, makes the following criticism of the vaginal operation: "On the whole, however, except in cases where the vaginal wall or the uterus is involved, there is no great advantage in the vaginal route over the perineal and bone-flap operations. ..... It requires more time, there is greater loss of blood, and there is more danger of infection through uterine discharges and dribbling of urine than in the sacral operation. Surgical shock is somewhat greater in the

sacral than it is in the perineal or vaginal operations, but this is more than compensated by the diminished loss of blood." I cannot see that these criticisms are altogether well founded, for surely there is good reason to suppose that the sacral is a more bloody route than the vaginal, and for this very reason it follows that the operation by this route will occupy the longer time in its performance. It certainly holds good that the vaginal wound has every opportunity of being soiled by any uterine or vaginal discharge which may be present, and on account of a prolonged attack of cystitis this was the gravest disadvantage from which my patient suffered.

Heretofore it has been supposed that the difficulties to be encountered in adopting the vaginal route lie in the insufficient exposure of the parts that can be thus obtained, but in the present case I was well able to remove the whole of the rectum up to the promontory of the sacrum and to clear out the sub-peritoneal and loose connective tissue and glands in its hollow. On account of the previous division of the sigmoid flexure, and dropping back into the pelvis of its distal portion, I found some difficulty in separating the attachments it had acquired to surrounding organs in the three weeks' interval which unavoidably elapsed between the two operations and also in securing the mesenteric vessels of this portion of the gut. Tuttle states that the sigmoid flexure itself may be extirpated by this route, but unless it possessed an extremely long mesentery I cannot but think that the difficulty of controlling the hæmorrhage during such an operation would be very considerable.

In the *Annals of Surgery* for September, 1905, Hartmann drew attention to the grave incidence of recurrences which occur after operations for rectal carcinoma in the amputated gut and surrounding scar tissue, and also to the very high post-operative mortality due to sepsis following Kraske's operation. It is of little use to run the immediate risks from sepsis if the patient is to die speedily from recurrence, hence the justification for performing a severer operation in the first place by which both these risks will be obviated. The severer operation means a wider removal of the diseased bowel, generally including the anus, and the provision of a permanent colostomy.

Personally, I consider that at least 2¼ to 2½ inches of the apparently healthy gut above and below the tumour must be removed with it, hence the anus must be sacrificed far more often than was formerly done and generally it will be necessary to excise from 6 to 8 inches of bowel, including the cancer. The advantage of excising so much intestine may be questioned when the impossibility of more than just clearing the growth laterally can often not be avoided, though one would undoubtedly seek to remove more of the surrounding tissues in these directions were it possible to do so without wounding the neighbouring pelvic organs. When the growth is on a level with the cervix uteri it is the easiest thing in the world to wound the ureters, an accident which is usually fraught with very serious consequences.

But there is a very good reason for removing the apparently healthy portion more widely, if, as Hartmann says, the frequency of recurrence in the amputated ends, when but an inch or two of clearance is made, is out of proportion to recurrences elsewhere. To remove the diseased gut more widely involves an increasing difficulty in bringing the upper end down to make an artificial anus, and also the sacrifice in a far larger proportion of cases of the anus. To remove the growth, making a clearance of 2½ inches, and at the same time to preserve the anus for purposes of anastomosis means that the disease is at least 4½ inches from the exterior, which is decidedly further than it is in the majority of cases. It is much better to make sure of non-recurrence by a wide removal of gut, including the anus if necessary, than to perform the theoretically perfect operation of enterectomy and anastomosis which will not insure, as far as we are at present able to, the permanent cure of the patient.

Although I am not advocating the performance of inguinal colostomy as a routine measure, I think it may with advantage be employed far more frequently than it is at present, and it almost becomes a necessary adjunct to the greater operation when the gut is more widely removed. That the previous manufacture of this outlet for septic matter is an immense advantage to a patient as far as his convalescence is concerned must be conceded by all, nor has it ever been proved that a properly constructed inguinal anus is so very inferior in point of comfort to the sphincterless sacral or perineal anus resulting from Kraske's operation. Even where surgeons have in the end had good results and have rendered the patient continent by the establishment of a sacral or perineal anus, it is too often at the expense of great temporary discomfort and danger, and it is my belief that if every excision of the rectum had previously had the fæcal current diverted by an inguinal outlet our past statistics for this operation would have been immensely improved.

If to remove as widely as possible is the principle which guides us in cancer operations in other parts of the body, the same rule must be observed as far as is possible in dealing with the rectum, and if six or eight inches of bowel are extirpated in order to get 2½ inches of clearance above and below the tumour it may become absolutely necessary to perform permanent colostomy on account of the difficulty of bringing down the proximal end of the divided bowel. Hence it will be better in the first place to make up one's own and the patient's mind to colostomy in order that this, the minor operation, may take its proper order some ten days before the removal of the growth.

A word here with regard to the sex of these patients. The whole of my remarks concerning the advisability of a wide removal and the establishment of an inguinal anus are applicable to the male as much as to the female sex. The vaginal operation is especially suitable for parous women. In nulliparæ the question whether the sacral operation would not be the better should be considered in each case, since in these subjects the vulval aperture is naturally less distensible and the field of operation proportionately narrower.

My reason for publishing this case of excision of the rectum at so early a date—viz., eight months after the operation—is that I may draw attention to the comparative ease and simplicity of the procedure by the vaginal route and to the very satisfactory progress that the patient has made up to the present time. Five years must elapse before the case can be said to be cured, but it may at least be urged that at the present time her condition, even though she possesses an artificial anus, is infinitely happier than formerly, and even if recurrence should shortly take place she will have a very considerable respite from her troubles and in all probability a considerably longer existence than would otherwise have been the case.

A married woman, aged 36 years, was sent to me by Mr. J. Bradley of Coventry and admitted into the General Hospital on Feb. 14th, 1907. She had been married 15 years and had had one child, now aged ten years. Until the August of 1906 she had always been in good health, but about that time she commenced to notice pain of a gnawing nature across the bottom of the back, especially when she was feeling tired. Shortly after this she began to suffer from diarrhœa and both pain and diarrhœa continued to get worse until her admission. A month prior to this date she began to experience bearing-down sensations as if there was some substance in the rectum, and during the last few weeks she had frequently passed blood and mucus. Latterly the pain had been continuous and the diarrhœa as frequent as five or six times an hour. At the time of admission she had lost a stone in weight. Her appearance on admission was that of a dark, anæmic, and rather wasted-looking woman, with the sallow complexion of commencing cachexia. Her stay in hospital showed her to possess a calm and cheerful temperament and she conducted herself during her trying illness with a fortitude and patience which were of immense help to her progress. On passing the right forefinger into the rectum I discovered a malignant ulcer 2¾ inches from the exterior. Its lower edge could be felt almost encircling the bowel, but when traced round anteriorly it could not be reached, suggestive of the fact that it was not completely annular. The constricted lumen of the bowel was just sufficiently large to receive the end of the index finger, but the upper limits of the ulcer could not be felt. On testing the mobility of the growth it was apparent that the operation of excision was advisable if it could be performed without undue delay. The course I determined to adopt, therefore, was immediate left inguinal colostomy, to be followed by excision of the rectum by the vaginal route ten days afterwards.

On Feb. 16th I performed the first of these operations. The usual incision was made through the parietes and the sigmoid colon was drawn outside the abdomen and its upper limb pulled down to obviate subsequent prolapse. The loop was then divided in such a manner that its proximal end would be of sufficient length to be utilised for a valvular colostomy after the method of Frank's gastrostomy—i.e., a surplus of about 4 inches was temporarily

left outside the abdominal wall for subsequent use. The open ends of the bowel were then sutured to prevent the escape of any septic matter during further operative manipulations. Before proceeding with the colostomy it was now necessary to remove the remaining lower portion of the sigmoid flexure, distal to the division and between it and the rectum. Further, it was necessary to remove as much of this bowel from above as was possible in order to facilitate proceedings at the second operation, and though I at this time removed quite a foot of large intestine I regretted afterwards that I had not made even a greater effort and removed some of the upper portion of the rectum. The advantage of thus excising a considerable portion of bowel above the growth more than is absolutely required to escape recurrence in the stump is a point that may be contended. On the one hand, we have the abdomen already opened for the colostomy, and it adds but little to the shock completely to remove a foot or two of intestine. On the other hand, if this intestine is left to be dealt with later it must be divided well above the growth from the sacral or vaginal wound, as the case may be, which may be a matter of some difficulty. The lower end of this intermediate portion must then be closed. This will be still more difficult and the risk of soiling the peritoneum will be very grave. Finally, a portion of intestine is left behind which is perfectly useless and may become a source of trouble. The double opening of intestine at the colostomy wound would also render any attempt at a valvular outlet the more difficult to accomplish. It may be especially urged that the removal of so much intestine contra-indicates this combined operation in those who are much enfeebled: that to escape from a mortality enhanced by sepsis and recurrence we are producing a greater mortality from shock. I do not think that such contentions form very strong arguments; cancer patients even when they appear feeble are good subjects for severe operations, and a review of the operative scheme such as I am here criticising seems to show that the only method of dealing with the lower half of the sigmoid flexure is to excise it at the initial operation of colostomy. The open upper end of the rectum having now been securely sutured and dropped back the remaining stages of the colostomy were concluded in the following manner. An incision was made through the skin and abdominal fascia 1½ inches in length, parallel to the first wound and about 2 inches nearer to the umbilicus. (In the Bailey-Witzel colostomy the second incision is below the first.) The subfascial tissues between the two incisions were then undermined and the sigmoid stump was passed through the tunnel and sutured to the second opening. The peritoneum was then united to the gut as it left the abdomen and the first incision was closed, a wick of gauze being left at its lower end for purposes of drainage.

The patient was fairly comfortable after this operation, and the artificial anus acted well on the second day. There was, unfortunately, some soiling of the lower wound, which was not surprising considering its proximity to the open bowel. Stitches had to be removed and it healed slowly by granulation. As not infrequently happens even to healthy women on whom pelvic operations are performed, the patient shortly began to suffer from cystitis, and notwithstanding vigorous treatment by internal medication and bladder irrigation, pus continued to be present in the urine for some weeks. I determined in the first place to cure the cystitis before proceeding to the vaginal excision, but finding this to be impossible and not wishing to delay the extirpation too long, I undertook the removal of the growth on March 8th, when the temperature had somewhat abated and the abdominal wound was doing well.

Second operation.—The patient being placed in the lithotomy position and the buttocks well elevated by a pillow, a median incision was made from the posterior vaginal fornix through the posterior vaginal wall and perineum. At the anterior margin of the anus it was made to encircle that aperture and was then continued on to the tip of the coccyx. As soon as the anus had been freed it was closed by the application of a ligature and the perianal skin was disinfected with strong carbolic solution. The rectum and growth were now as rapidly as possible freed from the surrounding structures with the fingers and blunt pointed scissors, and the pouch of Douglas was opened up. At the anterior aspect of the growth there was some suggestion of adhesion, as if infiltration had occurred at this point. Attempts to cut more widely at this place possibly resulted in a slight wound of a ureter, for from the second to the fourth day after the operation there was a decided odour of decomposed urine in the dressings which, however, happily passed away after that time and did not again recur. The only real difficulty of the operation was the separation of the upper end of the rectum, where it had been dropped back into the pelvis at the first operation and had subsequently become adherent. It was not found possible to tie the hæmorrhoidal vessels at this point, as one was working too much in a hole, and the necessity therefore arose of leaving on a pair of clamps. This might have been avoided had a greater effort been made to divide the mesentery from above when performing the first stage. The posterior vaginal wall and perineum were now closed with silkworm gut sutures and the anal portion of the incision was left open for the handles of the clamp, a large piece of iodoform gauze being made to protect them and guard the intestines and act as a drain; no attempt was made to close the peritoneum. The patient was removed to bed in very fair condition after being on the operating table for 50 minutes.

Convalescence was considerably prolonged, as I had reason to fear it would be, on account of the troublesome cystitis which delayed the aseptic union of the parts and the slight escape of urine which, as I have already said, took place on the second, third, and fourth day. The forceps were taken off after 72 hours and their presence also was militant to asepsis. Notwithstanding these adverse circumstances the patient's condition during convalescence was most favourable, very different from those cases in which fæcal soiling converts the wound into a foul chasm, discharging offensive pus, and in which tissue-necrosis is so often a prominent feature. The septic process was easily kept under control by irrigation and free drainage and the wound was never offensive after the fourth day. She was at no time in danger from septic poisoning and on the whole was comfortable and free from pain. She was up on the twenty-seventh day and left the General Hospital for the Jaffray Convalescent Hospital on the thirty-seventh day after the second operation. The wound was still granulating superficially and unfortunately she was still suffering from cystitis and required catheterisation. The bladder trouble lasted some four or five weeks in the convalescent hospital, but she eventually completely recovered from this troublesome complication. A sinus leading from the upper end of the vaginal incision backwards to the sacrum remained unhealed for a few weeks after she was up and walking about. She finally left the Jaffray Hospital on May 30th, 1907, very well in her general health, with no symptom of cystitis or of unhealed sinuses and with a perfectly satisfactory inguinal anus.

As regards the patient's present condition she writes to me (August 29th, 1907) to say: "I am pleased to tell you I feel very well indeed in myself now. I am in no pain; the only pain I have felt is a little aching when I have sat in one position too long three or four times since I came home. The 'front' acts very well indeed and I do my own dressing and I have no discharge now. I can eat and sleep well and walk about well. I walked about ten miles on Monday in the country and felt no ill-effects of anything afterwards. I do my own household duties, taking my own time, and have not required medical treatment since I came home." About a fortnight after this was written I had an opportunity of examining her and found the site of the wound perfectly healthy and no sign of recurrence. It can therefore be said that without proclaiming her safe as yet from recurrence she is at least happy and comfortable, free from anxiety, and able to perform her household duties. Her ability to walk ten miles in the country is quite remarkable within six months of two such severe operations. Whether or not the attempt at making a valvular colostomy has been quite the success that I had hoped for in this case I am not prepared to say. As far as colostomies go, it is quite as convenient as others, if not more so, I have done by Maydl's method or in other ways and it can at least be said that the patient is perfectly satisfied with the result. She is fitted with an aluminium shield and suffers from no uncleanliness. An inspection of the growth after removal revealed a wide shallow ulcer, some 2½ inches in diameter, both longitudinally and transversely, when the intestine was spread out. About half an inch of the bowel on the anterior aspect was free from ulceration. The ulcer was of the erosive type, hardly any new formation being present to the naked eye. A microscopical section showed it to be a columnar-celled carcinoma. I discovered one definitely infected gland in the subserous tissue removed with the growth from the sacral hollow.

Birmingham.

AN INTERESTING CASE OF TUBAL ABORTION.

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THE following case appears to be an interesting one on account of, first, the difficulty in coming to a satisfactory diagnosis previously to operation, then the conditions discovered at operation, and, finally, the uncommon condition of the bowel during convalescence.

The patient, aged 35 years, who had been married nine years and had had no children, I saw in consultation with Mr. C. J. Dabbs in June of this year. The history which she gave was that three years ago, having been previously quite healthy and regular, she began to be troubled with a creamy vaginal discharge, her menstruation became irregular, and she was occasionally troubled with metrorrhagia and pain in the left side. She suffered a good deal of inconvenience and pain at the introitus when sitting down. She consulted a medical man who told her that she was suffering from acute inflammation of the vagina, and she was ordered douches. Three months previously to my seeing her she had removed to Manchester from a town in a neighbouring county and she thought that her condition had been rendered worse by the fatigue and worries attendant on moving. In April her menstruation was more delayed than usual and lasted longer than before. In May menstruation came on at the expected time and, if anything, was less profuse than usual. In June she again menstruated at the expected time, the amount being again excessive. Mr. Dabbs was called in and saw her for the first time a few days before I saw her with him. She had had acute abdominal pain in the epigastric region, vomited, and, she thinks, fainted.

When I saw the patient she was pale, with an anxious expression, and complained of shortness of breath. Her temperature and pulse were both normal and had been so throughout the time that Mr. Dabbs had her under observation. She had some pain in the epigastric region and a "general feeling of uneasiness" in the abdomen. Palpation of the abdomen, which revealed nothing, caused no pain, and though there was no obvious distension the percussion note was markedly resonant. Diarrhœa had been present for some days but defæcation and micturition had been unattended by any pain. On vaginal examination there was a good deal of pain accompanying the introduction of the fingers through the introitus, in consequence of well marked and much inflamed piles. The vagina was normal, showing no discolouration. The cervix was hard and dilated at the external os by a polypus which hung down into the vagina. The uterus, which was firm and slightly enlarged, lay in the middle line with the fundus forward, its movement being distinctly limited by adhesions. The left appendages were easily felt to be normal, their palpation causing no pain. Through the right fornix and posterior to the uterus was felt an indefinite bogginess, the palpation of which was rendered very difficult and imperfect by the lower bowel being distended to an extent which I have never before observed. The examination, with the exception of the pain at the introitus, was at no time accompanied by any pain at all. The breasts suggested nothing. Thus far I was able to make out the presence of a cervical polypus, a slightly enlarged uterus, and some infiltration of the right broad ligament. The emptying of the bowel was accomplished with great difficulty subsequently to my seeing her.

On June 23rd the patient was admitted to a nursing home, my intention being to remove the polypus and endeavour to decide what the condition present in the right broad ligament was and deal with it if necessary. On the 24th, as she was going to the lavatory, she was suddenly seized with severe pain in the epigastric region, apparently fainted, and then vomited a good deal of stuff looking like coffee grounds. Despite this her pulse and temperature did not vary one bit, both remaining normal. The pain was of very short duration, and a few minutes after she asked that she might be allowed to have her tea as she felt quite well. On the 25th, having removed the polypus and lightly curetted the uterus, I made an exploratory opening through the posterior fornix. On passing my finger through this opening a quantity of broken-down blood clot and free dark blood escaped. Concluding that the case was one of extra-uterine pregnancy I decided to adopt the abdominal route. Having got through the skin and muscle in the middle line I found the intestines all matted in a firm dense mass of adhesions. Indeed, on separating the edges of the opening so far made the contents of the abdomen appeared more like a plaster cast of the contents of an abdomen rather than the actual contents of a living abdomen. After making several unsuccessful attempts to find a position where the intestines were not firmly adherent to the peritoneum of the abdominal wall, enlarging my incision almost up to the umbilicus, I finally gained entrance to the abdominal cavity by stripping the peritoneum from the muscle sheath and working down on the right of the incision. About one and a half inches from the right edge of the wound I found a portion of peritoneum encircled by a coil of intestines and free of adhesions. The opening here made was only sufficient to admit two fingers easily. The fingers passed directly into a circumscribed cavity of the size of a golf ball. From here I removed several blood clots and smart hæmorrhage followed. From this cavity a finger passed readily into a second larger and well defined cavity lying lower in the pelvis, the one into which I had opened from the vagina, while on passing the finger upwards and towards the middle line from the first discovered cavity was found the specimen removed. It consisted of the abdominal end of the right tube much distended by a blood clot of the size of a small Tangerine orange, in the centre of which was a cavity lined with a glistening membrane—the amnion. The rest of the tube was much elongated, exceedingly friable, and formed a pedicle for the dilated portion which lay to the right side and slightly above the level of the anterior superior iliac spine, under cover of a closely matted mass of intestines. The removal of the specimen was accomplished more easily than one would have desired or expected, for it came away quite readily after the adhesions had been broken down, the tube giving way like blood clot under the finger. Hæmorrhage was now taking place very freely from the two cavities and from the bed from which the ovum had been removed. Attempts at ligaturing bleeding points were fruitless, as on each occasion the vessel which was grasped either gave way under the pressure of the forceps or was at once cut through by the ligature. The aspect of the patient shortly became such as to cause serious anxiety, and some uncertainty was entertained as to whether she could be got from the table alive. All attempts at ligaturing were abandoned and the cavities were packed with gauze. Leaving the pack in position saline solution was kept flowing into the abdominal cavity. After some time the gauze was withdrawn, but as at once the hæmorrhage started to be as free as ever it was replaced, and leaving as much saline solution as possible in the abdominal cavity the wound was closed, the end of the gauze being drawn out at its lower end. A light pack was placed in the vagina and after giving her $\frac{1}{60}$th grain of sulphate of strychnine and $\frac{1}{4}$ grain of sulphate of morphine she was got back to bed. Her pulse was now thread-like and barely perceptible at the wrist and her temperature had fallen below normal. By dint of untiring and most careful and excellent nursing on the part of the matron she was tided over the night. Fortunately she was not much troubled with vomiting so far.

At 10.30 A.M. on June 26th, with the patient anæsthetised, the gauze plugs were removed. The removal of the abdominal one was immediately followed by a very smart flow of dark-coloured blood which, persisting as it did for some time, made one fear that the abdomen would have once more to be opened, a procedure which I felt convinced would prove more than her devitalised condition would permit of her getting over. The hæmorrhage, however, ceased as suddenly as it had come on and the lower end of the wound was closed. Her pulse was now 160 and her aspect was extremely bad. Throughout the morning she was very restless. In the afternoon she was greatly troubled by vomiting of a brownish-black liquid, the vomiting not being accompanied by any retching. It was very difficult at times to decide that this liquid was not fæcal in character, especially when the densely adherent condition of the bowels and the amount of manipulation to which they had been subjected made one greatly fear the occurrence of intestinal obstruction. As, however, all thought of any operative interference had to be put on one side, we could but hope that our suspicions were groundless. She slept not at all through the night. At 4 A.M. on the 27th she was given five grains of calomel and at 6 A.M. three grains. At 11 A.M. she was given a seidlitz powder and at 1.30 P.M.

a copious oil and turpentine enema. The enema was returned uncoloured but was accompanied by a little flatus. At 4 P.M. an ordinary enema was given, again with no result. At 9.30 P.M. she started to vomit and continued to do so, practically without stopping, throughout the night. The vomited matter, which was first of a greenish colour and sour-smelling and subsequently of a brownish-black colour, seemed merely to bubble up from the stomach. Towards morning the vomit had at times a distinctly fæcal smell. At 10.15 A.M. on the 28th, as the vomiting was quite uncontrolled by other means and she appeared to be sinking from its effect, I washed out the stomach with a solution of bicarbonate of sodium (one drachm to the pint). The effect of the washing was most marked and satisfactory. Her aspect improved and the vomiting only occurred at long intervals, and then was not of a character which in any way suggested its being fæcal. There still being no action of the bowels, I next applied the battery to the abdomen and continued to do so, at intervals of two hours, through the night. Towards morning on the 29th some fluid was passed from the bowel, accompanied by a good deal of flatus. This fluid, however, was nothing more than the return of a nutrient enema which had been administered a couple of hours before. The battery was persisted with and towards midday there was a copious evacuation from the bowel. From this time the sickness rapidly decreased and finally stopped and her aspect showed marked improvement.

The patient's convalescence, which would have been in any event a slow one, was, however, rendered more tedious by the cavities becoming infected from the bowel and the infection travelling up to the lower end of the wound and causing the muscle sheath to slough, there being for some considerable time a discharge of exceedingly foul-smelling pus from the lower end of the wound and from the vagina. A second and most interesting complication was caused by the condition of the lower bowel. Laxatives were administered, but the battery had still to be applied twice each day for any result to be got. This was persisted with for four or five days, and with apparently satisfactory results. The bowel then became very irritable, the motions being never formed, and the desire for the bedpan occurring every few minutes. Fearing that there may have been an accumulation of pus in the retro-uterine cavity, which was exerting pressure on the bowel and interfering with its normal action, I made a vaginal examination. The cavity was draining freely, there being no accumulation, but there was a distension of the rectum by hard fæcal masses to an extent even greater than when I had seen her before her admission to the nursing home. Enemas were administered but had no effect, the fluid being returned and the fæcal masses remaining unmoved. Manual removal had finally to be resorted to when it was discovered that there was a marked ballooning of the rectum. This was present to such an extent that these huge fæcal masses floated freely in the fluid still lying in the bowel without coming in contact with the bowel wall. It was subsequently observed that laxatives and the application of the battery to the abdomen had merely the effect of driving the bowel contents into this cavernous rectum and here they remained, the bowel making absolutely no effort to expel them. On three or four occasions manual removal had to be resorted to. This complication was finally overcome by applying the battery with one pole within the rectum and the other over the abdomen. Apart from these complications her convalescence has been most satisfactory.

The case presents many points of interest. The difficulty in making a satisfactory diagnosis, previously to operation, was greatly increased by the protracted history, the persistent irregularity of the patient's menstruation, and the fact that though, as was subsequently discovered, she had lost a considerable amount of blood her pulse throughout was a normal one. Her anæmic appearance, too, was regarded by her relatives as being her normal condition. Then, again, the absence of all pain or tenderness during examination of the uterus and its surroundings was a misleading feature. The two cavities discovered at operation and the dense matting of the abdominal contents must undoubtedly be regarded as evidence that the condition was of more ancient date than the attack which led to her consulting Mr. Dabbs. The presence of two cavities appears to be explained by supposing that there had been, at least, two serious hæmorrhages. With each hæmorrhage the dilated tube, which all the time appears to have been endeavouring to expel the ovum, was pushed higher up into the abdominal cavity and elongated. The position where the dilated end was found is uncommon, as is also such a degree of attenuation of the tube. The control of the hæmorrhage was rendered doubly difficult by the fact that one had so limited an opening into the peritoneal cavity through which to work, and even this was more or less diminished by the endeavours made to avoid damaging the bowel. On subsequent consideration one cannot but regret that the original incision was not abandoned and an opening made, through skin and muscle, directly over the opening into the peritoneal cavity. It would certainly have facilitated the operation. The introduction and removal of the gauze—which was several yards long—would have been simpler, especially the removal.

That the cavities, and subsequently the wound, became infected is not to be wondered at when one bears in mind the extraordinary degree of dilatation and atony of the bowel. This dilatation and atony, though so extreme, can no doubt be explained by the generally adherent condition of the bowel, plus the unfortunate, though so prevalent, indifference on the part of female patients to that most necessary and important function. That the bowel should have gone on strike was not at all surprising, but the ballooning of the rectum was, I think, most interesting and hardly to be expected. I may say that after five or six applications of the battery per rectum the bowel appeared completely to recover its tone and has since performed its function satisfactorily each day. On each occasion that the accumulation took place there was a distinct rise of temperature, suggesting some fresh infection. During the earlier part of the patient's convalescence the hypodermic needle was much in requisition, and it may be mentioned, as somewhat amusing, that she requested that a very blunt needle should be used rather than one which readily entered the skin.

I would like to express my indebtedness to Mr. A. G. Andrews and Mr. Dabbs for their kind assistance at the operation and especially to the latter who gave me the advantage of his daily assistance during the earlier and more anxious part of the patient's convalescence.

Manchester.

OBSERVATIONS ON THE TREATMENT OF YAWS (FRAMBŒSIA).

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IT is stated by several authors that frambœsia is a disease which is curable spontaneously and that drugs are useless in the treatment of the malady. While I do not deny that some cases may recover spontaneously, this, in my experience, is certainly the exception and not the rule. The medical man who is able to keep such untreated cases in view after they have been discharged from the hospital soon convinces himself that the cure was only apparent; in most cases the eruption breaks out again after a variable period of time. Moreover, many of these untreated cases, as well as a certain number of the patients who have undergone a not sufficiently prolonged treatment, develop after some years severe tertiary lesions, deep ulcerations, caries of bones, &c. In the Colombo clinic for tropical diseases I have tried various methods of treatment of which I here give, briefly, the results.

Mercury.—Mercury disguised in various ways is the popular treatment for frambœsia among the natives. Mercury is also the principal drug used by European practitioners. I have given various mercurial preparations by the mouth, by inunction, and by intramuscular injection. Whatever the method of administration the result is in most cases a rapid improvement of the eruption, provided the drug is given in sufficiently large doses. Many frambœsia patients, however, bear the drug very badly, so that the mercurial treatment has frequently to be discontinued after a short time. As soon as the treatment is stopped the eruption usually breaks out again. Except in the case of children, who bear the drug better than adults, I do not advise the use of mercury as a routine treatment for frambœsia.

Potassium iodide; sodium iodide; sajodin.—The potassium or sodium iodide treatment gives generally good results. The drug is given in the dose of 15 grains (one gramme) three or four times daily in milk, or well diluted in water. The iodides are generally better borne than mercury by frambœsia patients; occasionally, however, cases of idiosyncrasy for the iodides occur. In two such cases I tried

sajodin; the drug did not induce any signs of iodism; its action, however, on the course of the disease and on the eruption seemed to be very feeble.

Arsenical preparations; liquor Fowleri.—Liquor Fowleri given well diluted in gradually increasing doses of from 3 to 10 minims in water three or four times daily has not shown me any good result; moreover, several patients did not stand the drug well, complaining of abdominal pains and pains in passing their urine.

Atoxyl.—After the good results obtained with atoxyl in experimental trypanosomiasis by Thomas and Breiol this preparation has been found to be useful in various diseases due to trypanosomata (sleeping sickness), spirochætæ (spirillosis of the fowls), and treponemata (syphilis). Frambœsia being a disease due to a treponema (treponema pertenue) one would expect *a priori* the drug to be useful in this affection. That atoxyl has, in fact, a beneficial influence on the disease has been demonstrated by Neisser in monkeys inoculated with the disease and by myself in human patients. I have treated four patients with atoxyl alone. In three the eruption disappeared completely within two weeks from the commencement of the treatment. In the fourth case the treatment had to be given up on account of symptoms of arsenical poisoning. In all the cases I gave a dose of 0·05 gramme of atoxyl once or twice daily by deep injection into the buttock. The injections of atoxyl are not painful. The preparation is much less toxic than many other arsenical preparations; it may, however, give rise to symptoms of arsenical poisoning, as shown by one of my patients.

Sodium cacodylate.—Three frambœsia patients were treated with this preparation given by subcutaneous injection in the dose of 0·10 gramme once or twice daily for a month. In two patients the eruption completely disappeared after three weeks; in the remaining case only a slight improvement was noticeable after four weeks' treatment; the patient was then given iodide of potassium for three weeks and the eruption completely disappeared.

Quinine cacodylate.—This preparation has given me good results and the patients generally bear it well. Out of five cases treated in four the eruption completely disappeared and in one it greatly improved. I give quinine cacodylate in the dose of 0·05 gramme by subcutaneous injection once or twice daily.

Mixed treatment.—Since the important discovery of Ehrlich that trypanosomes and other protozoa may become partly or totally immune for a given drug, several mixed and alternating treatments have been devised and already tried for trypanosomiasis and malaria. In trypanosomiasis the best results have apparently been obtained by alternating an atoxyl cure with a trypanroth or mercury treatment. Working on this line I have tried on yaws patients affected with a severe form of the disease the following treatments: (1) a course of iodide of potassium of two or three weeks' duration, followed by a course of atoxyl of the same duration; (2) iodide of potassium followed by sodium cacodylate, the length of the treatment being the same as above; (3) iodide of potassium for two or three weeks followed by quinine cacodylate for the same length of time; and (4) mercury (two weeks) followed by atoxyl (three weeks). Without entering into the particulars of the investigation, I may say that I have obtained the best results with iodide of potassium followed either by atoxyl or quinine cacodylate, or by sodium cacodylate. The iodide of potassium was given in the dose of one gramme in milk three or four times daily; the atoxyl by daily subcutaneous injections (0·05 gramme); quinine cacodylate and sodium cacodylate also by subcutaneous injections, one injection daily, containing 0·05 gramme or 0·10 gramme of the drug.

Therapeutical experiments on monkeys inoculated with yaws; persistency of the infection.—Neisser and his co-workers in Java, and myself in Ceylon, have shown that monkeys are susceptible to frambœsia. In the monkeys with which I have experimented the eruption generally remains localised to the point of inoculation and is represented by a rather large granulomatous mass covered with a crust; the infection is general, as is shown by the presence of the treponema pertenue in the spleen, lymphatic glands, and bone marrow. The eruption in monkeys is very persistent. In 80 per cent. of the monkeys which I inoculated more than a year ago the eruption is still present; in several monkeys the eruption disappeared almost completely after three or four months, only to reappear a few weeks later. In monkeys affected with experimental yaws I have tried the following drugs given by subcutaneous injection in one-fifth doses, as for human patients: Hydrargyri perchloridum, 2 monkeys; atoxyl, 2 monkeys; quinine cacodylate, 2 monkeys; and sodium cacodylate, 2 monkeys. Whatever the treatment the eruption disappeared rapidly in all the monkeys in between 10 and 15 days, only a whitish scar remaining. Three weeks after the eruption had disappeared all the six monkeys were killed (under chloroform) and the lymphatic glands and spleen examined for the presence of the treponema pertenue. The result was as follows: Monkeys treated with mercury, treponema pertenue was present in the spleen and lymphatic glands of both monkeys. Monkeys treated with atoxyl, treponema pertenue was present in the lymphatic glands of both monkeys but not in the spleen. Monkeys treated with quinine cacodylate, treponema pertenue was present in the lymphatic glands of both monkeys but not in the spleen. Monkeys treated with sodium cacodylate, treponema pertenue was present in the lymphatic glands and spleen of one monkey but was absent in the lymphatic glands and spleen of the second monkey. From these experiments it would seem that while the various drugs used, mercury, atoxyl, &c., induce the rapid disappearance of the eruption, the disease is far from being really cured with the same facility. These results suggest that the treatment of yaws patients should be continued long after the eruption has disappeared.

I have also made a few experiments on the preventive properties of some drugs used in the treatment of the disease. On July 9th, 1907, two healthy monkeys (semnopithecus priamus) began receiving daily by injection 0·01 gramme of atoxyl for ten days; two other healthy monkeys of the same species were contemporarily injected with the same dose of sodium cacodylate for the same period of time. On the 22nd of the same month, three days after the injections had been discontinued, all the four monkeys were inoculated with scrapings taken from non-ulcerated yaws papules. At the time of writing (Oct. 15th, 1907), nearly three months after inoculation, no signs of eruption can be seen in any of the monkeys. On July 23rd, 1907, six healthy monkeys (semnopithecus priamus) were inoculated in the usual way with scrapings of yaws papules, the scrapings being well rubbed into deep scarifications made on the supra-orbital region; one half hour after inoculation the parts where the inoculation was made were well rubbed for ten minutes with mercury ointment in two monkeys; with atoxyl ointment in two monkeys; and with pure vaseline in the remaining two monkeys. At the present time (Oct. 15th, 1907) the two monkeys in which vaseline only was used show a frambœtic eruption at the place of inoculation; the two monkeys in which atoxyl ointment was used are so far free from the disease; of the two monkeys in which mercury ointment was used one has developed the disease and the other has so far remained free from it.

Conclusions.—1. Drugs and preparations which in my experience are efficacious in the treatment of yaws are: iodide of potassium, atoxyl, sodium cacodylate, cacodylate of quinine, and mercury. These drugs have also probably a preventive action. 2. The best routine treatment for ordinary cases is iodide of potassium given in large doses. 3. In severe and persistent cases a mixed treatment consisting of a course of iodide of potassium followed by a course of injections of atoxyl or of the cacodylates is of great advantage. 4. The treatment of yaws patients should be prolonged long after the eruption has disappeared, as although the granulomatous eruption speedily subsides the infection in many cases is merely dormant, not destroyed. This fact is shown by clinical experience as well as by experiments on monkeys inoculated with the disease. 5. As regards local treatment it is sufficient to keep the skin clean by washing the eruption twice daily with a solution of perchloride of mercury (1 in 1000). The ulcerated granulomata may be dusted with iodoform or boric acid. Mercury ointment applied to the ulcerated lesions may be beneficial but in my experience is not sufficient to hinder secondary pyogenic infections; for this purpose a protargol ointment (20 per cent.) is far more efficacious. Caustics are not called for unless the ulcers become phagædenic; in such cases pure carbolic is the best.

Colombo.

DEATH OF A CENTENARIAN.—Mrs. Mary Metherell died at Tavistock, in Devonshire, on Nov. 13th, in her 104th year. She was born at Mary Tavy in the same county on May 22nd, 1804.

A CASE OF CARDIAC DISEASE.

BY W. BLACK JONES, M.D., B.S. LOND., D.P.H.,
PHYSICIAN TO THE LLANGAMMARCH WELLS SPA;
AND
J. S. MACKINTOSH, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case of heart disease in which a patient had syncopal attacks, at times most dangerous, spread over a duration of more than two years, and was successfully treated at Llangammarch Wells is deemed worthy of record.

The patient, aged 30 years, a lady of rather delicate constitution, came under the care of one of us (J. S. M.) in the autumn of 1904 for an attack of catarrhal influenza from which she made an uncomplicated though slow recovery. On March 29th, 1905, she was seized with another and more severe attack of influenza, this time of the gastric type, and was treated with salicylate of bismuth and alkalies and afterwards with strychnine and phosphoric acid. Having in her previous illnesses and also in her confinements shown poor recuperative powers she was kept in bed for a fortnight with a nurse attending, at the end of which time she appeared to have recovered (her heart at no time revealing any abnormal sound or sign) and was allowed to get up on April 12th. She arranged to leave town on the 20th, but on the 19th, three weeks from the onset of her illness and a week after apparent recovery therefrom, she complained of feeling faint after exertion from packing and was advised to postpone her holiday and to rest. Next morning she stayed in bed and on examination marked cardiac dilatation was found, with a blowing systolic murmur, loudest at the apex, and a sharply accentuated second sound in the third left intercostal space close to the sternum, venous pulsation in the neck being also observed. The patient was left with strict orders not to raise her head from the pillow and a nurse was again procured. But in spite of absolute recumbency the patient 36 hours later had a syncopal attack which lasted seven hours. A week of syncopal attacks, most alarming at times, ensued. They ceased and by May 1st she seemed much better, but on the 2nd she raised herself on her elbows against orders to look out of the window and the syncopal attacks returned worse than ever. The maximum extension of cardiac dulness to the left of the nipple line was two and a half fingers' breadth. On May 23rd the syncopal attacks, which had almost disappeared for a week, came on again as badly as ever and continued until the 30th, when, owing to inferior brandy being accidentally substituted for old cognac, retching was set up which continued for 36 hours. Strangely enough the pulse improved after each fit of retching, the dilated heart apparently receiving sufficient intermittent compression between diaphragm and ribs to empty the distended ventricles, thus effecting what other means had failed to achieve. At this point the grave syncopal attacks ended. They were spread over a period of six weeks, causing the greatest anxiety to her medical attendant who spent at one time four and another time seven consecutive nights in her house. During this time she was seen by several consultants who generally regarded her case as one of myocardiac degeneration with toxic paresis of the cardiac nerves. It was also agreed that the neurotic element was absent; indeed, the patient's courage and determination to get well conduced not a little to her recovery. In treating the syncopal attacks neither strychnine, digitalin, nor atropine were of much use at the moments of danger. Sub-mammary injections of camphor (10 per cent. in olive oil) and especially of ether were, on the other hand, invaluable, the attack often ceasing at once and not returning for hours. Strychnine was apparently useful, however, hypodermically or by the mouth every four or six hours, as was also old liqueur cognac, in warding off threatened attacks.

During the next three months progress was very slow, headaches, neuralgias, flatulent dyspepsia, and mucous colitis (which persisted for a year) being very troublesome. The chief abnormalities of the circulatory organs were the loud "snappy" second sound in the third left intercostal space, the weak "thready" pulse, and the venous pulsation in the neck. She was unable to sit up without turning faint. In August, 1905, she had another attack of influenza of the ordinary catarrhal type. Fortunately it passed off without complications leaving her much where she was before its onset. During the ensuing winter 1905–06 she made slow improvement. Massage and "Schott" resistance exercises seemed to benefit her general condition and further reduce the cardiac dilatation, already much less marked. In April, 1906, she was taken by horse ambulance into Buckinghamshire where she remained five and a half months. Here she gained some strength, but the myocardium was evidently very weak and she was only able to walk a few steps from one room to another.

At the beginning of December she had her fourth attack of influenza followed for some weeks by threatenings of syncopal attacks, fortunately averted; but it was some months before she was able to walk again even a few steps. However, early in June, 1907, she appeared well enough to undertake a visit to Llangammarch Wells, and accomplished the journey in a special saloon without mishap.

Upon her arrival the patient came under the care of Dr. Black Jones. She was found to be well nourished, the digestion was good, the pulse was regular, the rate being 86 per minute, and the tension 110 millimetres by Potain's manometer. The heart was dilated, the apex being in the nipple line; the sounds were feeble but no murmur was heard. The urine was normal. She was very feeble and was unable to walk across the room, being carried about in a chair. Her appetite was fairly good; she was having brandy and strychnine daily. The patient was prescribed barium water, a glass to be taken twice a day, also massage and a course of baths. At first seven artificial Nauheim baths were given; these were followed by eight barium baths.

In the following table the mean pulse-rate per minute is given; it was first taken before the bath, after the patient had 15 minutes' rest on a couch, then during immersion, and lastly at the end of half an hour's rest after the bath.

Nature of bath.	Mean pulse-rate per minute.		
	Before bath.	During bath.	After bath.
Artificial Nauheim	85·4	81·1	81·1
Barium	83·0	73·5	78 5

It will be observed that a marked reduction of the pulse-rate took place in the bath and this was maintained for some time afterwards.

The patient soon began to improve and after three weeks she could walk a few yards without discomfort; the brandy and strychnine were consequently discontinued. The pulse-rate was less frequent and the tension had increased to 145 millimetres. She then made rapid progress and before she left on August 2nd she was not only able to go up and down stairs but also walked more than half a mile without any fatigue. The pulse-rate was then 72 per minute, the tension was 155 millimetres, the heart sounds were stronger, and the dilatation was less. On leaving Llangammarch she went to Ireland to stay with some friends, when she continued to gain strength.

Comment by MR. MACKINTOSH.—The points of interest in this case are, first, the long period which elapsed between the onset of influenza and the first syncopal attack, in this respect resembling the course of events in diphtheritic syncope, whereas in influenza such attacks generally come on during the first week; secondly, the long and desperate fight for the patient's life that may be expected once the syncopal attacks come on and their disheartening recurrence twice after apparent victory; thirdly, the extraordinary and paradoxical effect of the prolonged attack of retching in relieving the distended ventricles; fourthly, the dangers that may lurk behind a "simple attack of influenza"; and fifthly, the special value which the "Nauheim" treatment, in this instance the modified form in use at Llangammarch, has for these cases of post-influenzal cardiac disease.

Comment by Dr. BLACK JONES.—A large number of the patients who visit this spa annually are sufferers from the action of the influenza toxin on the myocardium. On previous occasions similar cases have been recorded by me in the columns of THE LANCET.[1]

The treatment adopted has been mainly on the same lines as mentioned above; in addition those who are able are encouraged to take hill-climbing exercise. This when properly carried out is a valuable adjunct to the other therapeutic measures. Some of the milder cases derive benefit

[1] THE LANCET, April 20th, 1901, p. 1137; and Nov. 3rd, 1906, p. 1214.

from a quiet round of golf, the links being conveniently situated close to the spa.

The result of several years' experience has convinced me that it is not the mineral water alone that is the sole agent in obtaining the beneficial results, but that the other factors of the treatment—viz., baths, massage, diet, and the bracing moorland air—all contribute to the successful issue, it being well recognised that climatic influences form a potent adjunct to treatment in the sequelæ of influenza.

A CASE OF GASTRO-ENTEROSTOMY WITH COMPLICATIONS.

BY T. J. CAREY EVANS, M.D. BRUX., M.R.C.S. ENG., L.R.C.P. LOND.,

HOUSE SURGEON TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

With Remarks by G. P. NEWBOLT, *M.B. Durh., F.R.C.S. Eng., Honorary Surgeon to the Hospital.*

THE patient, a man aged 44 years, was admitted to the Royal Southern Hospital under the care of Mr. Newbolt on July 14th, 1907. The history he gave was as follows. For 18 months he had been suffering from indigestion. Pain of a very severe nature would come on two or three hours after meals and sometimes was so severe that he was actually doubled up with it. The pain started in the epigastrium, extended round the right side, and ended at a corresponding point behind. The patient had never vomited any blood nor had he noticed any in his stools. He had been during this time much troubled with hyperacidity and flatulence. All solid food brought on the pain, pastry in particular. A little hot milk or hot water eased the pain for the time being, but it would soon return. He had had some very severe attacks; on several occasions he had had to remain in bed, once for a week and another time for six weeks. He had been carefully dieted, but the pain still persisted and kept him from his work. A day's history is as follows. Supper would be partaken of at 8 P.M. and at 10 P.M. the patient would retire to bed. The pain would come on at about 11.30 P.M. and would awaken him. He would be forced to get up and to take some hot milk or hot water. He would fall asleep again until awakened once more by the pain in three or four hours' time, when he would have again to take some hot milk. This went on every night with painful regularity. He was in the medical wards of this hospital for six weeks and was much better when he left. It is only six weeks since he was discharged.

On examination the patient appeared to be in a fairly good condition and by no means thin and wasted. The heart, the lungs, and the nervous system were normal. There was slight tenderness over the epigastrium, otherwise nothing abnormal was to be detected. He weighed 10 stones. The specific gravity of the urine varied from 1015 to 1030 and albumin was absent. The quantity of urine voided in 24 hours varied from 40 to 55 ounces. Sugar was present, usually five grains to the ounce.

At 2.30 P.M. on July 16th operation was proceeded with. The patient having been prepared as usual was anæsthetised with ether first, but as he took it badly chloroform was substituted later with little better result. His abdominal muscles were never completely relaxed during the operation. The usual incision was made in the middle line above the umbilicus. The tissues were infiltrated with fat and were very friable. The perigastric adhesions were very troublesome and the stomach could not be drawn up at all well into the wound. The transverse mesocolon was torn through and the posterior surface of the stomach was pulled through this opening with some difficulty. The upper part of the jejunum was easily found and was clamped. An incision one and a half inches long was made in the bowel (the antimesenteric border) and continuous silk sutures were used in the usual way. The abdominal wound was stitched up in layers with catgut and silkworm gut. This was the most difficult part of the operation on account of the rigidity of the abdominal muscles. The operation took one hour and the pulse at the end of the operation was 112. On the 17th the patient was troubled with acid eructations and he vomited very acid fluid, dark in colour. The pulse was 130. The stomach was washed out on the same evening with a solution of bicarbonate of sodium. This gave relief. On the 18th the pulse was still very rapid, ranging from 130 to 140. The patient felt quite comfortable but was vomiting. At 5.30 P.M. the stomach was again washed out when the bile returned. The patient looked very blanched; his pulse was regular but rapid, counting 130. It was decided to open the wound, a vicious circle or obstruction from some cause or other being suspected. At 6.30 P.M. the wound was opened under chloroform and a coil of small intestine was found gripped by the muscles in the lower part of the wound. Below this point the intestine was empty; above it it was very distended. The coil was returned and the gastro-enterostomy was examined and was found to be perfect. The abdominal wall was stitched with through and through silk sutures and with a continuous skin suture. The operation lasted for 20 minutes. On the same evening the patient felt much relieved and the vomiting ceased. The pulse was 140 and the temperature was 99·5°F. On the 20th the pulse was 110 and the temperature was 99°. On the 21st the patient was seized with pain in his right chest. The respirations went up to 48 and the temperature to 101·5°. There was slight dulness over the right base and very fine crepitus or friction could be heard. During the next few days the temperature remained at about 101° and the pulse at 110. On August 4th, the dulness being now more marked and the other clinical signs of fluid being present, an exploring needle was introduced but no fluid was obtained. No improvement having taken place in the lung condition, although there was no abdominal discomfort at all and the wound had healed perfectly, an exploratory puncture was made on the 9th and pus was obtained. The skin was rendered anæsthetic with eucaine and adrenalin and a large trocar and cannula were introduced into the eighth interspace a little in front of the scapular line. A pint of pus was obtained. The cavity was drained with a rubber tube passed through the cannula, the patient being too ill to stand further operative treatment at this stage. On the 13th under chloroform an incision was made over the old puncture and a big rubber tube was put in. The patient was very feeble and was much exhausted. After this improvement was very rapid. The temperature, pulse, and respirations all improved. The patient began to take feedings well and had no abdominal discomfort at all. He was discharged on Sept. 11th feeling very well. The gastro-enterostomy has been perfectly successful and the empyema has closed up. The sugar has also disappeared from the urine.

I am indebted to Mr. Newbolt for permission to publish the case and for the following remarks by him.

Remarks by Mr. NEWBOLT.—The interest of this case lies in the fact that the patient had glycosuria to begin with. This was probably of a temporary nature and due to his digestive disorders. The operation was difficult on account of the perigastric adhesions and the rigidity of the abdominal muscles. The pylorus was found to be thickened and constricted. It was evident on the morning after the operation that something was wrong but the wound looked perfect. The symptoms were not definitely those of a vicious circle. As, however, there was no improvement the wound was opened and hernia of the small intestine was discovered and replaced. The empyema which followed was doubtless due to an infection of bacillus coli and the pus had a foul smell. The operation quite relieved the symptoms and all the sugar disappeared from the urine some days after the operation. The latest reports are quite satisfactory.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Avian and Human Tuberculosis.—Tuberculin Ophthalmic Reaction.

A MEETING of this section was held on Nov. 19th, Mr. S. G. SHATTOCK, the President, being in the chair.

A Contribution to the Study of the Relationship between Avian and Human Tuberculosis was communicated by Mr. S. G SHATTOCK, Dr. C. G. SELIGMANN, Mr. L. S. DUDGEON, and Dr. P. N PANTON, which is printed in full in this issue of THE LANCET (p. 1443).—Dr. W. KNOWSLEY SIBLEY referred to experiments made by himself some 20 years ago, when he failed to obtain tuberculosis in pigeons either by feeding them or inoculating them with human tuberculous

sputum. He, however, still believed that there was no specific difference between mammalian and avian tubercle bacilli; it entirely depended upon the difference in the temperature of the blood of mammals and birds.

Mr. L. J. AUSTIN and Dr. O. F. F. GRÜNBAUM gave a brief *résumé* of the evidence upon which von Pirquet concluded that the formation of a papule within 24 hours after inoculation with tuberculin depended upon the interaction of the virus and a property of the inoculated person which he termed "allergie." They pointed out that von Pirquet had shown that on applying a 25 per cent. solution of tuberculin to the scarified skin of a patient suffering from tuberculosis the papule appeared within 24 hours. This reaction was only of diagnostic value when applied to young children, for most adults developed a papule, whilst it failed in tuberculous subjects shortly before death. Calmette had transferred the site of inoculation from the skin to the conjunctiva. This investigator placed in the eye one drop of an aqueous solution of a precipitate obtained by adding 95 per cent. alcohol to tuberculin. The development of a conjunctivitis within 24 hours was asserted to be proof positive that the patient was suffering from tuberculosis. Mr. Austin and Dr. Grünbaum had tried that test on 70 cases, and of those they believed 20 to be tuberculosis, and the reaction proved positive in 18. Of the two in which reaction failed one might be accounted for by the fact that the test was carried out within a few days before death. Negative results were recorded in 52 cases, and amongst these were 15 cases of bronchitis, eight of typhoid fever, three of pneumonia, three of acute rheumatism, two of chlorosis, three of diabetes mellitus, two of chronic arthritis, two of empyema, two of hysteria, and many other single cases of various diseases. They concluded that the tuberculin ophthalmic reaction promised to be a most valuable method of diagnosing obscure cases of tuberculosis, but, like all other tests, was not infallible.—Dr. J. E. SQUIRE said that at the Mount Vernon Consumption Hospital Calmette's tuberculin had been tried recently in 120 cases, and in all those in which tuberculosis was definitely proved to be present by the recognition of tubercle bacilli in the sputum a positive reaction was obtained. It had been found that the reaction did not always show in five or six hours; in one case in a supposed healthy subject a slight reaction commenced after two days. In two presumably healthy subjects an indefinite reaction occurred, but on a second application of the test a very severe reaction occurred. There was evidence that a general reaction occurred and it might be necessary to readjust the dosage.—Mr. SYDNEY STEPHENSON reported favourable results from the Calmette reaction in upwards of 50 cases. He mentioned cases in which slight chronic conjunctivitis persisted for days after the tuberculin had been applied to the eye.

OPHTHALMOLOGICAL SOCIETY.

Some Cases of Interstitial Keratitis from Acquired Syphilis.—The Anatomy of the Pectinate Ligament and its Bearing on the Physiology and Pathology of the Eye.

A MEETING of this society was held on Nov. 14th, Mr. R. MARCUS GUNN, the President, being in the chair.

Mr. J. HERBERT FISHER read a paper on Some Cases of Interstitial Keratitis from Acquired Syphilis. He expressed surprise that so few instances of the kind had been brought before the society, seeing that Mr. Jonathan Hutchinson, when vacating the presidential chair, had specially directed the attention of members to this subject as one upon which information might usefully be collected. The text-books dismissed the matter with very brief reference and gave no authoritative statements as to frequency, date of onset, severity, and prognosis of the disease. After reading notes of his four cases and alluding to one of corneal inflammation which rapidly followed the primary inoculation of syphilis on the lower eyelid, Mr. Fisher expressed the opinion that interstitial keratitis from acquired syphilis was generally a tertiary manifestation; that it appeared usually to attack only one eye, and that the infiltration frequently limited itself to a portion only of the cornea; that the keratitis, as far as it went, was identical in clinical appearances with that due to inherited disease; and that the statement which had been made by Nuel that it was usually secondary to irido-choroiditis was by no means universally accurate.

Mr. FISHER further read notes of a case of Interstitial Keratitis in the child of a mother who had herself inherited syphilis and who had in consequence suffered from kerato-iritis, with choroiditis and deafness. The question of the transmission of syphilis to the third generation was raised upon this case. Assuming the husband of a woman who had inherited syphilis to have acquired syphilis, the point was raised whether she was more or less likely than a wife free from inherited taint to bear syphilitic children to him. Other practical points for discussion were raised and members were invited to contribute their experiences with a view to the guidance of ophthalmic and general surgeons who were asked to advise in regard to the marriage of subjects of inherited or acquired syphilis.—The PRESIDENT remarked that in acquired syphilis interstitial keratitis was uniocular.—Mr. E. TREACHER COLLINS commented on the fact that in two cases the primary lesion was on the ocular conjunctiva and one on the lid of the eye subsequently affected, while a fourth was on the lip, and in each case only one eye was involved. In his experience of interstitial keratitis due to primary syphilis the initial chancre had occurred on the lid of the eye subsequently affected.—Mr. SYDNEY STEPHENSON adverted to the few cases reported in the Transactions, though there were a hundred in the literature exhibiting patchiness of the corneæ. The keratitis occurred, on an average, 10·8 years after the primary infection, though in three cases it supervened within two years. Two-thirds were unilateral and the rapid response to mercurial treatment was diagnostic. Bilateral keratitis occurred in untreated cases.—Mr. FISHER, in reply, said the unilateral incidence of the keratitis was connected with damage to the cornea by the infecting lesion.

Mr. THOMAS HENDERSON (Nottingham) read a paper on the Anatomy of the So-called Ligamentum Pectinatum Iridis and its Bearing on the Physiology and Pathology of the Eye. He stated that the so-called pectinate ligament was a part of, and belonged to, the sclera. The principle on which it was constructed was perfectly simple, being exactly the same as that which obtained in the fibres of the neighbouring tissue in which it lay, an open network composed of non-sclerosed interlacing fibres, which were in direct continuation with the circular and longitudinal bundles of the sclera surrounding the venous sinus of Schlemm's canal. The circular fibres were made out in tangential and transverse sections of the pectinate ligament, while the longitudinal fibres were seen in radial sections. The criterion of a true radial section was that it showed the anatomical connexion and continuation, often suggested, but hitherto never yet demonstrated, of the hyaline layer of the ciliary body with the posterior limiting layer of the iris. Arising as a continuation of the innermost lamellæ of the cornea, the pectinate ligament could be divided into (1) a small outer or scleral portion, where fibres at the posterior end of Schlemm's canal became lost in those of the sclera; and (2) an inner larger or ciliary division, which could be still further subdivided into (*a*) a portion which pierced the scleral ring to give attachment to the meridional fibres of the ciliary muscle; and (*b*) a part which passed internal to the scleral ring to terminate in the connective tissue stroma of the circular portion of the ciliary muscle. None of the fibres of the ligament turned round into the root of the iris, as was described. This appearance was the result of an oblique section and emphasised again the importance of studying only true radial preparations. The iris root was attached to the circular bundles of the ligament at a point just posterior to the scleral ring, which attachment to the ligament was quite a different matter to fibres of the ligament being said to bend round into the iris, which they did not. He considered that the term ligamentum pectinatum iridis was thus not only altogether inappropriate but also wrong and misleading, as in man it was neither a comb-like structure nor was it a ligament of the iris. On this account and because of its retiform or cribriform structure, and further, on account of it being a ligament in the true sense of the word to the two portions of the ciliary muscle the term "cribriform ligament of the ciliary muscle" was much more appropriate. This ligament showed a most marked histological difference in its structure and nature at different periods of life. In youth it was cellular, while as age progressed it became more and more fibrosed. It was this physiological sclerosis in excess that he considered was the fundamental *causa causans* of primary glaucoma, in the causation of which two factors must be separated—the one constant, the other accessory. The first and constant factor was sclerosis of the filtration network and a consequent diminished

outlet. The second and variable agent was vasomotor in nature, and it was this that determined the acute attack, in which there was superadded to the first an inflow out of proportion to the available and already reduced channels of exit from the eyeball. Viewed in this light the whole phenomena of glaucoma, clinical and pathological, could be explained. A closer study of this sclerosis of this filtration network gave a clear view of the process of development and stage of formation of connective tissue, with definite histological proof that white and elastic tissue was not a direct conversion of the cell protoplasm but was derived indirectly from alteration and transformation of a homogeneous substance which was itself the product of cellular activity. The alveoli of the filtration network were connected with the lymph spaces of the cornea and sclera, the fixed corpuscles of which were brought into direct association with the endothelial cells of the anterior chamber. It was in consequence of this anatomical continuity that the cornea, by diffusion, received its nourishment from the aqueous. This fact would explain a great deal and would have the utmost bearing on the pathology of corneal diseases.—Mr. N. BISHOP HARMAN commented on the value of this investigation in advancing the knowledge of a complex and an obscure subject.—Mr. A. H. THOMPSON expressed surprise that glaucoma was not more common if sclerosis of the pectinate ligament were an ordinary senile process.—Mr. E. TREACHER COLLINS stated that the pectinate ligament was very different in the human eye and in lower animals, and deductions in the latter would not apply to the former; exact details of mode of preparation and examination were also necessary before trustworthy inferences could be drawn as appearances were liable to be modified greatly by changes produced by preserving media and the plane of section. He thought the glaucoma picture as indicated was too simple to cover all the aspects of so complex a matter.—Mr. W. T. LISTER inquired how the explanation now offered could be reconciled with the adhesion of the iris to the back of the cornea so constantly met with in glaucoma. Were they to give up the theory of small eye and large lens and the blocking up of filtration space in this type?—Mr. J. HERBERT PARSONS said that the anatomical features just described did not differ materially from those already accepted, the innovation being principally in the interpretation of them, and the deductions from appearances were hardly justified. The distinction between the scleral and uveal portions of the ligament could really only be determined by embryological research.—Mr. HENDERSON, in his reply, said that after iridectomy for glaucoma the iris stump never really healed and continued to afford free channel for absorption. This could be demonstrated by the use of staining fluids in rabbits. His contention was that glaucoma resulted from sclerosis of thep ectinate ligament, being precipitated by vasomotor changes and intensified by the effect of intra-ocular tension in producing venous stasis.

UNITED SERVICES MEDICAL SOCIETY.

Enteric Fever in War.

A MEETING of this society was held at the Royal Army Medical College, Millbank, on Nov. 14th, the President, Sir H. M. ELLIS, K.C.B., Director-General of the Medical Department of the Royal Navy, being in the chair.

Major W. S. HARRISON, R.A.M.C., read a paper on Enteric Fever in War. He drew attention to the fact that whereas in the case of malaria, trypanosomiasis, plague, and Malta fever, research had brought to light one great causative factor and had thereby greatly simplified the problem of prevention, with enteric fever the results of investigation had had the very opposite effect, for while a few years ago people thought that enteric fever was spread almost entirely by the fæces of enteric fever patients getting into drinking water, research of late years had brought to light the infectivity of the urine and fæces not only of patients suffering from enteric fever but also in convalescents and even in people who had never had the disease, and he gave examples showing that this infectivity might last for many years. He traversed very strongly the notion that the high incidence of enteric fever in India and in war camps was chiefly due to water-borne infection; he showed how the conditions in England were entirely different from those which prevailed in India and in camps; and he gave evidence which showed the preponderating importance of dust, flies, and personal infection in these places. He considered that the continued high incidence of enteric fever in India was largely due to the dry earth system of conservancy combined with the superficial burying of the dejecta, a system which he described as an institution which might have been expressly devised for the propagation of enteric fever. Applying these points to the question of the prevention of enteric fever in war, he showed how the soil of camps was invariably fouled with possibly infective urine, especially at night, and how impossible it was to prevent such contamination; also that in camps at the front they could not hope to institute a system of conservancy which was even as good as the admittedly bad dry earth system of Indian cantonments, since in the great majority of cases the only possible latrine was a simple trench. On these grounds he thought that the chief hope of improvement in the matter of enteric fever in war lay in the direction of preventing, so far as possible, the inclusion of typhoid carriers in the force when it took the field and secondly in raising the resistance of every member of the army to enteric fever by means of inoculation. For the first he proposed that during peace time enteric fever convalescents should be collected in special depôts away from other troops and kept there until thorough investigation showed them to be free from infection; if they proved to be chronically infective he would invalid them. At these depôts the convalescents could continue their training and lead a tolerably free life. In the matter of inoculation he gave the following statistics dealing with the incidence of enteric fever in seven large stations in India for the first six months of 1907:—

—	Average strength.	Cases.	Deaths.	Incidence per 1000 strength.	Mortality per 1000 strength.
Not inoculated...	8,113	173	42	21·32	5·18
Inoculated... ...	2,207	15	3	6·8	1·36

He thought that these figures were sufficiently good to make them seriously consider whether the time had not now arrived for making anti-typhoid inoculation compulsory in the army. He suggested that it was a very small addition to ask a man to submit to 24 hours' inconvenience on two occasions when they were already asking him to offer himself as food for bullets whenever required, and he considered that it was illogical to control a man's dress, food, and dwelling and to compel him to submit to vaccination against small-pox when at the same time the question as to whether he should be protected against enteric fever was left to the man's discretion.

Lieutenant Colonel A. M. DAVIES, R.A.M.C., advocated the exercise of extreme care in the inspection of men at the field of operation and the segregation of suspicious cases for observation. He was of opinion that it was possible for diarrhœa to pass by a process of evolution into enteric fever.

Major J. K. RITCHIE, R.A.M.C., considered it impossible to segregate all cases of enteric fever in the field. He believed the bacillus to be specific and that evolution did not occur and predicted a great future for bacteriology and inoculation.

Captain C. F. WANHILL, R.A.M.C., alluding to dangers from native followers, advocated strict supervision of natives and improved sanitation in native camps.

Captain B. B. BURKE, R.A.M.C., instanced the occurrence of 11 consecutive cases of enteric fever among native mule-drivers in India.

Surgeon-General Sir T. J. GALLWEY, K.C.M.G., C.B., A.M.S., doubted the possibility of performing a complete inspection in the field and segregation. He regarded the suggestion of compulsory inoculation as most important.

Lieutenant-Colonel R. J. S. SIMPSON, C.M.G., R.A.M.C., quoted enteric fever statistics of the British and Japanese armies in recent wars.

Lieutenant-Colonel C. C. REILLY, R.A.M.C., asked for further information on the statistics of inoculated men. (The question was answered by Lieutenant-Colonel W. B. LEISHMAN, R.A.M.C.)

Captain J. M. CUTHBERT, R.A.M.C., alluded to the susceptibility of recently arrived troops in India and suggested the possibility of infection by water in the transports.

Captain J. C. KENNEDY, R.A.M.C., quoted the enteric fever statistics of Malta with special reference to the dry-earth and water-carriage systems of drainage.

Major HARRISON replied and the proceedings terminated with an exhibition of microscopical specimens in the pathological class-room.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Oct. 24th, Dr. G Thomson, the President, being in the chair.—Mr. A. W. Cuff read notes of the following cases: 1. Foreign Body in the Bronchus. A child, aged three years, had accidentally inhaled a small cartridge case, which entered the right bronchus. It was localised by the x rays and removed through a low tracheotomy wound, being dislodged by a Killian's sharp hook and coughed up. 2. Foreign Body in the Œsophagus. A child, aged five years, swallowed a half-penny. It was localised in the œsophagus opposite the second dorsal vertebra by the x rays. An attempt was made to remove it with a coin-catcher. The metal part, however, broke off and remained in the gullet. An œsophagotomy was performed and the coin was secured but not the broken part of the coin-catcher. The wound healed well but the metal part of the coin-catcher caused great trouble. The child had a high temperature with rigors which did not cease when the missing piece had been passed per anum. The abdomen was opened but the only abnormality found was enlargement of the mesenteric glands. The child subsequently completely recovered. 3. Re-ection of the Thyroid Gland for Acute Dyspnœa. A youth, aged 18 years, had been treated with iodide of potassium for a goitre. The gland suddenly increased in size, causing profound dyspnœa. He was taken to the Sheffield Royal Infirmary in such acute distress that his medical attendant was hesitating whether to perform tracheotomy in the cab. A high tracheotomy was done and a catheter was passed down below the obstruction with, however, only partial relief. A hemi-thyroidectomy was performed under local anæsthesia. The wound healed without any complication in spite of the presence of the tracheotomy wound. Mr. Cuff thought that the text-books rather overrated the danger caused by the presence of the latter.—Dr. H. G. M. Henry showed two cases of Congenital Syphilis. One of these was a boy with Hutchinson's teeth, interstitial keratitis, gumma of the scalp, rhagades round the mouth, and the liver enlarged to below the umbilicus. There was syphilitic osteo-arthritis of both knees, with much enlargement of the epiphyses of the femur and tibia. He also showed a case of Pulmonary Osteo-arthropathy in a boy, aged 11 years, with bronchiectasis of eight years' standing. The fingers were rather longer than normal and the terminal phalanges were clubbed. There was no enlargement of the radius and ulna, nor of the tibia and fibula at their lower ends. There was well-marked effusion into the right knee-joint.—Mr. P. E. Barber read a paper on the Artificial Feeding of Children. The best substitute for human milk was cow's milk—herd milk, not single cow's milk. With regard to modification, he took Professor G. F. Still's analysis of cow's milk and showed how it could be modified, so that not only fats, carbohydrates, and proteins were in the same proportion as in human milk but also that the caseinogen and lactalbumin were in the some proportions. This latter point was of great importance, as excess of caseinogen was often the cause of trouble. The mixture which approximated most nearly to human milk was as follows: whey, 18 drachms; milk, 6 drachms; cream, 1 drachm; and a teaspoonful of sugar. He did not approve of barley-water as a diluent. As substitutes for fresh milk they had condensed milk which when sweetened contained so much sugar that it was impossible to obtain the right proportions, and when not sweetened it presumably contained some antiseptic. He had had some experience with dried milks. Standardised brands could be obtained which were borne very well and were very cheap. When babies were unable to deal with the curd of modified milk it was necessary to peptonise it. The child could be taken off the peptonised milk by gradually shortening the time for peptonisation. There was much to be said on either side with regard to sterilisation. He condemned the proprietary foods as likely to produce rickets. He laid great stress on the examination of the diapers in order to find out whether the child was properly digesting fats and proteins.—Dr. A. E. Barnes admitted that many children did very well on milk unmodified or simply diluted but where there was any alimentary disturbance some modification was necessary. He advised the "American" system and gave his experience at the infirmary. Its advantages were: (1) simplicity; and (2) its great elasticity, enabling symptoms to be treated by variations in the proportions of fat and protein. He admitted that it was impossible in some cases to begin with a full proportion of protein. He condemned patent foods because they were either very bad or very dear. He strongly advised boiling the milk because pure milk was very difficult to obtain and he thought the danger of diarrhœa was much greater than that of scurvy rickets.—Dr. Harold Leader thought that an infant's stomach was incapable of discriminating between small differences of percentage. Most children did very well on unmodified milk or on milk simply diluted with barley-water. The milk should be boiled in summer.—Dr. Henry condemned patent foods as they were so much abused, especially by hospital patients.—Dr. A. E. Naish entirely agreed with Mr. Barber. He condemned the "American" method because it took no notice of the difference between the percentages of casein and lactalbumin in human and cow's milk. This explained why in the "American" system it was often impossible to commence with the full proportion of protein. He deprecated boiling the milk because although the risk of scurvy rickets was very small he was strongly of the opinion that children fed on boiled milk alone could develop rickets.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on Nov. 13th, Dr. J. W. Ballantyne, the President, being in the chair.—The President in his valedictory address gave biographical notices of the honorary Fellows who had died during the past session—Gusserow, Pasquali, Budin, and Barnes—and referred to the loss sustained by the society by the decease among others, of Dr. Alexander Peddie, one of its original members at its foundation in 1839. The hospital treatment of morbid pregnancies and the history of the movement for pre-maternity beds or wards for the study of such cases were fully given. The President had first suggested the subject in a lecture in November, 1900. Criticisms and misconceptions had to be met that these beds would be used only as temporary residences for pregnant unmarried women or pregnant fallen women with venereal disease. Then came the welcome announcement that a friend had endowed a bed in the Edinburgh Maternity for the treatment of women with morbid pregnancies. This took place in 1901, and since then many cases had been treated in this bed, and the President gave details of some of these which had occurred during his term of office each year at the hospital. Cases of eclampsia had been treated on to labour or discharged cured before the onset of labour; of albuminuria in pregnancy; epilepsy; pseud-angina; pregnancy with old-standing hemiplegic contractures; prolapse of the pregnant uterus at the sixth month; several cases of heart disease complicating pregnancy; a case of myxoma of the chorion; threatened abortion; accidental hæmorrhage; grave anæmia; hyperemesis and hydramnios. Some degree of confusion had been present in the minds of the resident physicians as to the nature of the cases that might find admittance to this bed. No patient actually with the pains of labour should ever be put into it. From his experience during the last few years he made the following suggestions:—1. The pre-maternity bed or beds should be strictly reserved for cases of morbid pregnancy. 2. If a patient suffering from one of the maladies of pregnancy pass into labour within 48 hours of her reception she shall not be regarded as a pre-maternity case, for obviously such a brief stay does not permit of any satisfactory attempt towards effective treatment of her malady. 3. The pre-maternity beds should be placed in a ward by themselves and should not be located in the ordinary ward used for the puerperal patients. 4. A sister should be in charge of these beds who has had a surgical and medical as well as an obstetric training, for the nursing will necessarily be more strictly medical or surgical than obstetric. 5. No attempt should be made to adapt the diet of puerperal patients for the use of the pre-maternity patients. 6. Special case-taking forms should be used for these cases. 7. A special case-book should be kept in which every pre-maternity patient's case should be entered for preservation of results. 8 In pre-maternity cases special attention should be devoted to urine analysis, to examination of the blood and nervous system, to ophthalmoscopic investigations, and thorough examination of the signs and symptoms of pregnancy, including fœtal movements and descriptions of the fœtal heart. 9. Cases of infectious fever complicating pregnancy or insanity should not be admitted. 10 It was doubtful if cases of syphilis should be admitted but cases of gonorrhœal vaginitis and vulvitis might be taken in. Alcoholism and dipsomania might perhaps be regarded as suitable but not cases of delirium tremens. 11. All the ordinary complications of pregnancy

would be suitable, also pregnancy accompanied with tumours, ectopic gestations, hydramnios, placental hæmorrhage, ante-natal death or deformity, and habitual abortion. He threw out some suggestions for pre-maternity wards or hospitals. The pre-maternity hospitals should be connected with the maternity hospital but not included in it. The pre-maternity portion should resemble closely an ordinary general hospital in its construction and arrangement rather than a maternity hospital. Its management should be kept as far as possible distinct from that of the maternity. The nursing, diet, and regimen and to some extent the medical treatment required all differed from those in use in a maternity hospital. The record with the special details of diagnosis and treatment should be carried with the patient on the supervention of labour to the maternity hospital. A resident physician should take charge of this hospital, the physician of the maternity hospital should make a visit each day, and there might profitably be a consulting physician and surgeon. It would be an immense advantage if young graduates, such as Carnegie Fellows and scholars, would take up the investigation of problems of metabolism, excretion, circulation, &c., in pregnancy.—On the motion of Sir Alexander R. Simpson, seconded by Sir J. Halliday Croom, the President was given a cordial vote of thanks for his address.—The following were elected office-bearers for the ensuing session:—President: Professor W. Stephenson. Vice-Presidents (senior) Dr. W. Fordyce; (junior) Dr. F. W. N. Haultain. Treasurer: Dr. W. Craig. Secretaries: Dr. G. F. Barbour Simpson and Dr. Angus Macdonald. Librarian: Dr. Haultain. Editor of Transactions: Dr. W. Macrae Taylor. Members of council: Sir J. Halliday Croom, Dr. Samuel Sloan, Dr. E. W. Scott Carmichael, Dr. J. W. Ballantyne, Dr. J. Lamond Lackie, Dr. D. J. Graham, Dr. A. T. Sloan, and Dr. R. P. Ranken Lyle.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on Nov. 15th, Dr. George Carpenter being in the chair.—Mr. G. H. Lock read a paper on a case of Rheumatic Hyperpyrexia in a child, aged six years. A year previously she had had an attack of chorea; on Sept. 10th, 1907, she had left lobar pneumonia which terminated by crisis on the fifth day; two days after the crisis the choreiform movements returned. On Sept. 20 h there was pain in the left hip and the temperature rose to 100° F. Subsequently, other joints became involved and the case was a typical one of acute rheumatism with chorea. On the third day the temperature rose to 107°; in spite of treatment by ice-pack and graduated bath death occurred on the fifth day, the temperature just before death being 110°. The severe choreic movements ceased only with death.—Dr. Eldon Pratt read the notes of a case of (1) Fractured Lower Jaw in a child aged four years. The child had been kicked by a horse and the fracture was vertically through the symphysis. It was treated by a dental splint. Union was firm at the end of 15 days and a perfect result was obtained, there being complete absence of any deformity. 2. Notes on a case of Vaccinia. The patient was a baby who was vaccinated when six days old in four places on the left arm. Six days later all four places had taken well; ten days later there was extensive ulceration over the arm measuring 3¾ inches by 4¼ inches, the surrounding skin was much inflamed, and there were pocks of auto-inoculation near the left axilla and over the right ribs. The whole of the body, face, and limbs was covered with a diffuse papular rash. The condition rapidly subsided under boric fomentation.—Dr. Carpenter showed a boy, aged 11 years, with a Tuberculous Tumour of the Pons verified by Calmette's Ophthalmo-reaction. Subjective symptoms commenced in August; optic neuritis and ophthalmoplegia externa appeared at the end of September. He now had continuous incontinence of urine and fæces. He could answer questions rationally and called out if he wanted anything. Headache was now rarely complained of, sickness had disappeared, the knee-jerks were absent, he lay curled up in bed, and although blind from choked discs was contented. Dr. Carpenter was not in favour of trephining for the relief of the optic neuritis.—Dr F. J. Poynton showed a case of Œdema persisting since birth. The patient was a male child, aged two years. Swelling of the feet had been noticed since birth, varying in amount; the eyelids had been swollen in the mornings, and there was well marked swelling on the dorsum of each foot, with slight pitting on hard pressure. The urine was normal in quantity, there being a faint trace of albumin and a few degenerative epithelial cells with scattered leucocytes; there were no casts or crystals. He thought that there was some renal fault of congenital origin.—Dr. G. A Sutherland showed a girl, aged seven months. The feet had been swollen since birth, the sole being tense and hard, while the dorsum was soft and œdematous. Marked blueness of the feet and hands followed exposure to cold, though the hands were not œdematous. There was no evidence of renal or cardiac disease. The child had suffered for some weeks from lichen urticatus.—Mr. Russell J. Howard showed a case of Precocious Development of the obese type in a girl. He could find no evidence of any disease of the ductless glands or the accessory genital organs.—Dr. J. Porter Parkinson showed: (1) A case of Facial Paralysis in a girl, aged three and a half years, with some weakness of the leg, apparently due to encephalitis; and (2) a case of Lymphadenoma affecting the Cervical Glands in a boy, aged six years.—Dr. R. Warren showed a case of Congenital Dislocation of the Hip-joint in which the x rays showed that the head of the femur was absent and the neck was much smaller than usual.—Mr. Hugh Lett showed a case of Acute Arthritis of the Hip-joint in a boy, aged 11 years, treated by irrigation and drainage. The patient had recovered with perfect movement in the joint.—Dr. L. A. Clutterbuck showed a case of Intention Tremors in a child, aged five and a half years. Labour was tedious; there was no history of syphilis. There were coarse intention tremors of the hands and marked incoördination of the lower limbs. The knee-jerks were increased and Babinski's sign was present. The child had never had convulsions. There were no changes in the fundi.—Mr. A. H. Tubby showed a case of Constriction of the Thigh by the Umbilical Cord.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this association was held on Nov. 7th, Dr. D. M. Greig being in the chair.—Dr. C. McVicar showed a man with Osteitis Deformans who was a typical example of the disease.—Dr. G. A. Pirie showed a case of Dextrocardia in a young man who suffered from extensive pulmonary tuberculosis of the right lung; the apex beat was above the right nipple. An x ray photograph proved that the condition was due to contraction of the right lung.—Dr. G. W. Miller showed a specimen of Cerebral Hæmorrhage into the right lateral ventricle which occurred in a girl, aged 17 years.—Dr. J. Mackie Whyte showed specimens of Colloid Cancer from the stomach of a man, aged 69 years, who had been a soldier for 31 years. He had had syphilis when aged 21 years and had been a heavy beer drinker. On admission to the infirmary he exhibited all the symptoms of chronic gastritis. There was considerable ascites; he was tapped and 130 ounces of fluid were withdrawn, but the ascites returned in a week. He was again tapped and 160 ounces were removed, when several hard nodules were then felt throughout the abdomen and distinct peritoneal friction could be detected. After a short illness of seven weeks' duration, during which time the nodules increased rapidly in size, he died from exhaustion. On post-mortem examination a primary colloid cancer in the posterior wall and lesser curvature of the stomach was discovered, with secondary nodules in the liver and spleen. The whole peritoneum was studded over with small growths. The mucous lining of the stomach was fairly healthy and showed no signs of ulceration. Dr. Whyte then read notes on a case of Septicæmia treated by a specially prepared vaccine. The patient, a man, aged 56 years, had suffered from varicose veins in the left leg for 16 years. During February and March of this year he was treated in the surgical wards of the infirmary for phlebitis and ulcer of the leg. His temperature was above normal all the time of his stay and he had two rigors. The leg healed and he was sent to the convalescent home. There he was troubled with headaches and indigestion and shiverings, and on April 27th he was sent back to the medical side of the infirmary. On admission, apart from a high temperature (104° F.) and slight enlargement of the liver, little could be found. On June 5th an examination of the blood showed a pure culture of staphylococcus. The opsonic index on the 6th was 1·2, and on the 7th sterile staphylococcus vaccine (250,000,000 cocci) prepared from the patient's blood was injected. From that day onwards he made a steady recovery. The negative phase after the injection was well marked, being 0·7 on June 8th, and it rose from 1·66, 1·83, to 2·6 on the 15th. He had a few unpleasant symptoms of headache and slight diarrhœa. On the 18th the blood was sterile, there being no growths in broth or agar after 48

hours. Since then he has been seen frequently and continues well. Dr. Whyte stated that in spite of the positive Widal test, which was known to be sometimes got without any previous or past attack of typhoid fever, the case must be called one of septicæmia and no doubt the treatment must be credited with the good result, as the vaccine with its 250,000,000 dead cocci so altered the state of things in the blood that opsonins were produced after the inoculation in such quantity as to render the microbes a ready prey to the leucocytes. The necessity of using the patient's own particular strain of cocci in similar cases was emphasised.—Dr. Greig read notes of two cases in which the healing of persistent sinuses had been greatly expedited by the use of vaccines. In the first case the sinuses had existed for six months and the infection was a pure staphylococcus one. A considerable variety of treatment had been tried previously to the inoculation. Notwithstanding this, only one inoculation was required, the staphylo-opsonic index rising thereafter from 1·7 to 2·5 and the sinuses were entirely healed within a fortnight. The second case was a pure colic infection following an enterectomy for tuberculous disease. The opsonic index was unusually high and only a small amount of specially prepared vaccine was injected, with the result that the sinus, which had existed for 52 days, was healed a fortnight later.—A discussion, taken part in by Dr. McVicar, Dr. Whyte, Dr. G. Halley, and Dr. Greig, followed upon vaccine treatment in relation particularly to the dose required as indicated by the opsonic index.—Dr. Greig read notes of a case of Lymphoma of the Rectum occurring as a single tumour in a woman, aged 30 years. He demonstrated its structure by a photo-micrograph and pointed out the extreme rarity of the condition. He then read notes of a case of Primary Carcinoma of the Appendix occurring in a man aged 35 years. The condition had not been recognised previously to the pathological examination, when it turned out to be an atypical cylinder-celled carcinoma with a tendency to alveolar carcinoma. An unusually difficult operation was required for the removal of the mass but recovery was satisfactory and two years later the patient was known to be apparently in perfect health. Dr. Greig also read notes of a case of Rhabdomyosarcoma of the Prostate occurring in a child, aged four years, and demonstrated the structure by photo-micrographs shown by the lantern.—Dr. Pirie gave an account of a visit which he had paid to the principal hospitals in Paris, Lucerne, Milan, and Venice, when he saw the electrical departments there and examined all the latest apparatus.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Nov. 6th, Dr. S. Moritz, the President, being in the chair.—Dr. Ernest S. Reynolds made some remarks on the Diagnosis of Epilepsy, pointing out the difficulties which occasionally arose in distinguishing between epilepsy and syncopal attacks of mitral stenosis, certain forms of migraine, Ménière's disease, and hysteria. He pointed out the line of inquiry which should always be followed to obtain an accurate history of the recurring attacks.—Dr. Alan McDougall read a paper on the Colony System of Treating Epileptics. He said that in order to live congenially a man must be not much unlike his neighbours, and that an epileptic whose malady was at all severe could be like his neighbours only if they, too, were epileptics. The congenial surroundings of a colony gave the confirmed epileptic the best chance of ceasing to have fits, but even in the cases where no diminution of the frequency took place most epileptics were far happier at a colony than they could be at home. The colony system aimed at developing the character of the epileptic by making him live a life as similar as was practicable to the lives lived by normal people; it treated the epileptic as a citizen rather than as an invalid. Occupation was found for all the colonists; each took some useful part in the work of the colony; work was not done for work's sake but because the work required to be done. Epileptics who could earn their living at home were best kept at home; dangerous epileptics should be certified and sent to asylums; all other epileptics got their best chance of living a congenial life by residing at a colony.—Dr. Charles H. Melland gave an account of two unusual cases. The first was one of Amœbic Abscess of the Liver. The patient had contracted malaria and dysentery in India. He was invalided home and when on his return he began to have periodic rigors and attacks of pyrexia malaria was diagnosed and he was at first given large doses of quinine, subsequently followed by arsenic. This went on for many months. On coming under the care of Dr. Melland the patient was in an extremely weak and emaciated condition. Repeated examination of the blood failed to reveal any evidence of malaria, but there was a well-marked polynuclear leucocytosis of 20,000 leucocytes per cubic millimetre, suggestive of suppuration, and an exploration of the liver in the seventh right intercostal space in the anterior axillary line revealed the presence of pink pus in which a single amœba was discovered. The discovery came too late to save the patient's life, as he failed to survive the operation for the evacuation of the pus. The case demonstrated the advantage in cases of presumed malaria of an examination of the blood. The second case was one of Ulcerative Endocarditis. The patient was under care for nearly six months, but on two occasions was discharged as cured. From the beginning he had a systolic murmur, heard as well at the base as at the apex of the heart, but beyond this he had from first to last no definite symptoms pointing to any serious heart lesion. There was no rheumatic history. He had pyrexia at times, sweating, pleurisy, and abscess at the base of the left lung, acute nephritis, profound anæmia, and diarrhœa, but it was only at last when he developed purpura, enlargement of the spleen, and a general septicæmic condition that a diagnosis could be made. At one period during the formation of the pulmonary abscess he developed an enormous leucocytosis. At the necropsy the pulmonary valve was found to be wholly replaced by granulations. No other valves were affected. The main points of interest were: (1) the curiously chronic course and long duration; (2) the apparently complete recovery on two occasions; (3) the absence of symptoms pointing to any serious cardiac lesion; and (4) the limitation of the lesion to the pulmonary valve.

HARVEIAN SOCIETY.—A meeting of this society was held on Nov. 14th, Dr. Sidney P. Phillips, the President, being in the chair.—Dr. James S. Collier read a paper on the Pathology and Treatment of Cerebral Vascular Lesions. The older theories as to the pathology of cerebral hæmorrhage were reviewed and various reasons were given against regarding miliary aneurysms as the cause of hæmorrhage. Increasd arterial tension was essential to the circulation of an arteriosclerotic patient and reduction of pressure caused danger of thrombosis. Arguments were adduced to show that hæmorrhage was probably always preceded by thrombosis; it was usually impossible to distinguish clinically between the two conditions, but this distinction was unnecessary as the same treatment—namely, stimulation—gave the best possible results. The actual lesions found in the brains of arteriosclerotic patients were then described and it was suggested that the following was the mechanism of cerebral hæmorrhage: a small patch of yellow softening, the result of thrombosis, formed in the neighbourhood of a medium-sized artery and destroyed the vitality of the artery, which then gave way at that point. Certain rare forms of hæmorrhage were referred to in which thrombosis was admitted to be the antecedent. In regard to treatment the alkaline citrates were recommended as prophylactics. In all cases stimulants, including alcohol and strychnine, should be used, as they tended to limit the thrombosis and to open up the collateral circulation. In syphilitic cases it was important to get the patient under the influence of mercury before giving iodides, as iodides when given first tended to cause rapid constriction of the syphilitic tissues and irreparable damage. Lumbar puncture often caused rapid improvement, as much fluid as possible being withdrawn. Venesection did good mainly by improving the tone of the general circulation. The patient should be got out of bed as soon as possible and should be ordered early passive movements, especially to the shoulder-joint.—Dr. James Taylor said that the incidence of hæmorrhage and thrombosis depended largely on the class of patients examined, hæmorrhage being commoner in general hospitals than in those for nervous diseases. He mentioned points of diagnosis between the two conditions, especially the loss of consciousness and the soft pulse in cases of thrombosis. As regarded treatment he believed that the more they held their hand the better; depleting treatment was bad.—Sir John F. H. Broadbent said that he disapproved of stimulation in cases of cerebral hæmorrhage, as he believed that it must increase the hæmorrhage. He argued that hæmorrhage was mainly due to the fact that the cerebral vessels being thin and incapable of hypertrophy gave way before the increased tension.—Dr. B. H. Spilsbury also discussed the paper and pointed out the absence of renal thrombosis in these cases.—The President spoke of

the obscurity of the etiology of thrombosis.—Dr. Collier replied.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 15th, Dr. W. Langdon Brown, the President, being in the chair.—Dr. Leonard L. B. Williams read a paper on Some Medical Hæmorrhages. He said that what was usually understood by hæmorrhage was the passage of blood out of its normal channels either into the outer air or into tissues which received it reluctantly and immediately set to work to dispose of it. Some methods by which loss of blood might occur were closely connected with the important subject of blood pressure. It might occur by the normal pressure acting on inadequate or diseased vessels, or it might result from a supernormal pressure acting on vessels which were virtually and clinically normal. It was, of course, when both these abnormalities were present simultaneously that the conditions were most favourable for the occurrence of hæmorrhage. Examples of such were all cases of ruptured aneurysms, most cases of apoplexy, the hæmatemesis of hepatic cirrhosis, and the hæmaturia of granular kidney. Sustained high blood pressure might be the result of toxins circulating in the blood, which either directly or by way of the nervous system constricted the peripheral vessels; or it might be the result of a purely defensive measure on the part of the organism. Arteries, by reason of the constant strain upon them by toxins, soon became organically implicated and underwent sclerotic and other degenerative changes. To these changes various names were applied. In the larger vessels they were called atheroma, the preliminary stage of aneurysm and angina pectoris; in the smaller vessels they were called arterio-sclerosis, the results of which varied with the site of its selection, for of all the morbid processes this was surely the most capricious. An arterio-sclerosis of the kidney was called chronic interstitial nephritis, an arterio-sclerosis of the liver was called cirrhosis, but in both of them the essential condition was a degeneration of the arterioles, which degeneration has been provoked by the long-continued strain of a high blood pressure which was originally functional and curable. A man who had high blood pressure due to toxæmia might bleed from anywhere. The site of the hæmorrhage was merely a question of his place of least resistance, and if that happened to be in a branch of one of his bronchial arteries instead of in his nose he would have a hæmoptysis instead of an epistaxis, and whether it were the former or the latter the hæmorrhage was properly and effectually treated by nitrite of amyl. Hæmoptysis due to high arterial tension was an event of much more common occurrence than was generally supposed, and very probably of the many recorded cases of hæmorrhage of the lung which had been successfully treated by this means some at least had been cases of high arterial tension mistakenly labelled "phthisis."

SOUTH-WEST LONDON MEDICAL SOCIETY.—A meeting of this society was held on Nov. 13th, Dr. A. Dumville Roe, the President, being in the chair.—Dr. F. W. E. Hare read a paper on the Dietetic Treatment of Certain Diseases in the Well Nourished and Corpulent. He said that the four main varieties of dietetic treatment were vegetarianism, the modified vegetarianism of Haig, the Salisbury meat diet, and Chittenden's reduced diet, and as each of them was successful in the same disorders it followed that there was some essential factor common to them all. He gave reasons for refusing to accept the theories which attributed the disorders to purins, to toxins, or to reflex action, and contended that the one factor which fulfilled all necessary conditions was that to which he had applied the term "hyperpyræmia"—that is, the condition of the blood in which the carbonaceous material was in excess of the capacity of the organism for physiological disposal. Dr. Hare explained how each of the main forms of dietetic treatment acted in its own way to reduce this hyperpyræmia. It was of importance to distinguish between "prepotent" and "postpotent" conditions. In the latter the safety valve action of the paroxysms came into action only when the physiological needs of the body had been satisfied; in the former the action was premature and conditioned by a relative and not a real excess of carbonaceous material.—The President said that due attention to diet was of great value in the treatment of many diseases, of which he quoted cases from his own experience.—Dr. Harry Campbell gave a *résumé* of his investigations into the probable diet of the prehistoric ancestors of man, showing that man was largely carnivorous at the time when he discovered the art of cooking his food.—Dr. Charles A. Mercier said that the consumption of fat, especially in the form of butter, was a potent cause of migraine and that patients suffering from paroxysmal headache could always be relieved but not often cured by restriction of diet.—Dr. E. H. Colbeck gave some interesting facts as to the diminished power of coagulation possessed by the blood of patients suffering from dietetic excess.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 7th, Mr. H. H. Taylor, the President, being in the chair.—Mr. George Morgan showed a baby with Both Knees Slightly Flexed, the right being a little swollen; there was also swelling of the little toe-joint. He considered the trouble was probably tuberculous. He showed also the aunt of the baby who had had a Swollen and Stiff Right Knee-joint for ten years. The swelling was very hard but the x rays showed no enlargement of bone; this was probably also tuberculous. He also showed from a case of Scurvy Rickets a femur surrounded by a large blood clot outside which bone was being laid down. Microscopic sections showed the proliferating cartilage of rickets.—Dr. Walter Broadbent exhibited a man, aged 40 years, who a fortnight before suddenly developed Ptosis of the Left Eyelid and since then complete paralysis of the left third nerve. The left pupil reacted neither to light nor to accommodation. The right was small and reacted only to accommodation. The knee-jerks were very slight; Romberg's symptom was not present.—Dr. C. F. Bailey showed a skiagraph of a Costal Process Rising from the First Bone of the Sacrum which had been causing severe pain down the patient's leg for some years. He also showed a skiagraph of a Fracture of the Lower End of the Fibula without Displacement which had been caused while driving at golf. He also showed a Rodent Ulcer healed by zinc ionisation.—Dr. D. G. Hall showed a Cretin Baby.—Dr. F. G. Bushnell read a paper on the Treatment of Infective Diseases by Vaccines. He first demonstrated the method of preparation of the vaccine. He then explained immunity, active, put in play by bacterial vaccines, and passive, produced by the introduction of antitoxic sera obtained from animals actively made immune. Unfortunately, the diseases for which antitoxic sera could be produced were few in number. Several substances might be present in the blood which were hostile to bacteria; bactericidal bodies killed bacteria, bacteriolysins dissolved them, agglutinins and precipitins compelled bacteria to clump together, and opsonins prepared them for digestion. He discussed phagocytosis and said that the phagocytic power of polynuclear leucocytes varied in the same media; he had shown that the normal leucocyte was three times as phagocytic as that of a patient with myelocythæmia. He then explained the administration of vaccines controlled by the opsonic index. He handed round a list of about 100 cases treated in Brighton by vaccines, the results being only moderately successful.—The paper was discussed by the President, Dr. A. W. Williams, Dr. L. A. Parry, Dr. V. T. Greenyer, Dr. E. F. Maynard, Dr. E. Hobhouse, Mr. A. J. Hutchison, Dr. J. F. Gordon Dill, and Dr. Broadbent.

HUNTERIAN SOCIETY.—A meeting of this society was held at the London Hospital on Nov. 13th, Mr. F. Rowland Humphreys, the President, being in the chair. The following cases were shown:—Mr. T. H. Openshaw: 1. A girl, aged two and a half years, with Microcephalus. 2. A boy, aged 17 years, with a Tumour of the Spermatic Cord of doubtful nature.—Mr. F. S. Eve: A man, aged 69 years, with a Tumour of the Testicle of three months' duration. There was no enlargement of the inguinal or lumbar glands and the patient was free from pain. The tumour was considered to be malignant.—Mr. H. M. Rigby: 1. A man upon whom he had performed Partial Gastrectomy for Carcinoma of the Pylorus eight months previously. The patient was in excellent health and had no dyspepsia. There were no signs of recurrence. 2. A man with Aneurysm of the Superficial Femoral Artery. Three months previously his superficial femoral artery had been tied three inches above the aneurysm. There was a little superficial gangrene of the skin of the heel but the aneurysm was cured.—Dr. B. Dawson: A man with Myelogenous Leukæmia who also had gout and glaucoma in both eyes.—Dr. F. J. Smith: 1. A man, with Lead Paralysis of the scapulo-humeral and ante-brachial type. He had had symptoms of lead colic on and off for 15 years; there were some blurring of the discs and a well-marked blue line on the gums. 2. A girl with Adherent Pericardium. Broadbent's sign was well marked. The patient also had

very large rheumatic nodules.—Dr. W. Langdon Brown, in discussing the case, remarked on the great value which he placed on the presence of Broadbent's sign.—Dr. W. J. Hadley: A man with Fibrosis of the Lung, consequent on pneumonia in May this year. The possibility of the case being one of unresolved pneumonia or tuberculosis was considered. No evidence of tuberculous infection had been found.

ULSTER MEDICAL SOCIETY.—The opening meeting of the present session of this society was held on Nov. 7th, when Dr. John McCaw, the new President, took the chair and proceeded with his inaugural address. He commenced with a graceful reference to the honour conferred upon the profession in Belfast in the knighting of Sir John Byers and a kindly tribute to the loss which the society had sustained in the death of Dr. Henry Murney, Mr. J. C. McCleery, and Dr. R. A. L. Graham. He then spoke of the great advantage to the medical school caused by the recent opening of the new laboratories at Queen's College, Belfast, after which he referred to the awakening on public health questions produced by the Belfast Health Commission and the benefits which would follow the inauguration on Oct. 29th of the Belfast branch of the Women's National Health Association of Ireland by Her Excellency the Countess of Aberdeen. Dr. McCaw then gave an address on Tuberculosis in Childhood and its Relation to Milk. He showed by statistics collected from the two children's hospitals in Belfast, as well as from those in London, Manchester, Edinburgh, and Glasgow, that at least 30 per cent. of the children treated in children's hospitals suffered from some form (medical or surgical) of tuberculosis, and that everything seemed to point to the conclusion that the disease was communicated to these children by being fed on the milk of tuberculous cows.

Reviews and Notices of Books.

Les Venins: Les Animaux Venimeux et la Sérothérapie Anti-venimeuse. By A. CALMETTE. Paris: Masson et Cie. 1907. Pp. 396. Price 12 francs.

IN the preface the author explains how the interest and importance of the study of snake venoms were impressed upon him 13 years ago when located at Saigon in Cochin China, since when these studies have continued to occupy some considerable portion of his time. Dr. Calmette and his pupils have contributed many important researches upon venoms and his discovery of the antitoxin treatment of snake poisoning in 1894 is well known. Dr. Calmette has a very pleasant style of writing and this volume, which deals with venoms and venomous creatures from all points of view, cannot fail to interest those who are desirous of acquainting themselves with the subject. The literature is by no means exhaustively reviewed but abundant references to original papers are given in the text so that it will be invaluable to future workers on venoms.

The first 150 pages, which comprise Part I. of the volume, are devoted to the consideration of the mechanism of the poison apparatus of snakes and the general classification of poisonous serpents. The teeth, cranium, musculature, and the structure and position of the poison gland are adequately described, and from the number of illustrations interspersed in the text the reader will have no difficulty in gaining knowledge of these structures. This is followed by a detailed description of the principal poisonous snakes of sufficient size to be dangerous to man, arranged geographically. In this description the nomenclature and classification of Boulenger are adopted and abundant use is made of his catalogue of snakes issued by the British Natural History Museum. Not the least valuable characteristic of this portion of the work is the excellent reproduction of pictures of the more important snakes. These illustrations have been collected from a variety of sources and are not otherwise available in any easily accessible form. Several small mistakes occur in this portion of the book, as, for instance, the statement that *Vipera aspis* is an inhabitant of the British Isles.

Part II. (Chapter IV.) commences with a further description of the poison gland and its relation to the cannulated teeth or poison fangs. The account is rather sketchy and with reference to the way in which the poison is expressed not quite accurate. It is followed by remarks on the general property of venoms and the methods of procuring venom from the reptiles and drying it. Chapter V. is concerned with the chemical properties of venoms and the effect of heat, light, extreme cold (−180° C.), and the emanations of radium upon them. The account includes most of what was known upon this subject at the time of publication. Recently, however, Faust has split off from the poisonous proteids of cobra venom a non-nitrogenous highly toxic substance which he calls ophistoxin.

According to naturalists the poisonous snakes fall into two main classes—viz., *Colubridæ* and *Viperidæ*. The author is correct in pointing out that in a general way there is a distinction between the chemical property and physiological action of venoms corresponding to this morphological differentiation. This correspondence is, however, only true in a general way and many venoms possessing intermediate properties and action occur, notably in the case of the Australian snakes. To disregard exceptions may simplify exposition but is not justified in a book of the size of that under review.

The chapters devoted to the physiological action of venoms, although containing much interesting matter, are very unequal and in some important respects are deficient. They give no complete account of knowledge on this subject but consist of a series of isolated fragments under different headings. The general physiological analysis of the effects of a number of different venoms which has been made by Brunton and Fayrer, Weir Mitchell and Reichert, Martin, Lamb, Elliot, Rogers and Elliot, and Fraser, and which forms the essential part of our knowledge as to how various venoms exercise their dire effects, is not even mentioned. Throughout these chapters there is again a tendency to convey to the reader the view that the constituents of snake venoms are simpler than is really the case and to minimise the differences in details of physiological action which exist between the venoms of even the same class of snake. The action of venoms upon blood plasma and their influence in some cases in determining coagulation and in others in inhibiting this process are treated at length. The venoms of most of the vipers are correctly described to contain substances which produce coagulation of plasma *in vitro* and *in vivo*, but the statement that no colubrine venom exercises this action is a mistake, as the poisons of many of the Australian snakes and of the Indian *Bungarus fasciatus*, all of which belong to the Colubridæ, contain extraordinarily active fibrin ferments. Again, on p. 202 the Australian snake *Notechis pseudechis* is wrongly described as producing an anti-coagulatory action.

Except that no mention is made of the large series of observations made by Lamb upon the specificity of hæmolysins, the hæmolytic action of venoms is well treated in the space devoted to it. The author has himself contributed important observations bearing upon the mechanism of this action and is therefore in a position to present the salient facts in short space. We cannot, however, follow Dr. Calmette's reasoning in the following sentences which appear on p. 212:—

> I have been able to establish that the anti-neurotoxic property of cobra anti-venene is sufficiently parallel to the anti-hæmolytic property to make it possible to measure *in vitro* the antitoxic value of a serum by determining the degree of anti-hæmolytic power possessed by it. One sees *thus* that a serum antitoxic and anti-hæmolytic with regard to the venom of Naja (Cobra) is equally anti-hæmolytic against the venoms of the Colubridæ and even against the venoms of the Viperidæ.

It may be true that in elaborating antitoxin a horse responds proportionately to the stimuli of neurotoxin and

hæmolysin but we fail to see how this justifies any conclusion regarding the specificity or otherwise of hæmolysins. Nor in the preceding pages have we discovered any facts which support such a view. On the contrary, the careful work of Lamb and others seems to us to have shown conclusively that the hæmolysins of snake venoms are largely, although not entirely, specific.

Chapter X. deals with the toxicity of the blood of venomous serpents. Their blood is distinctly toxic for animals but owes this property to substances other than those contained in their respective venoms. Chapters XI. and XII. deal in an interesting way with the apparent natural immunity of certain animals, notably the mongoose and hedgehog, and with that supposed to be possessed by some snake-charmers. The author found that the animals mentioned possessed considerable resistance against snake poison but no real immunity. Their ability to deal with venomous snakes with moderate impunity is therefore due to their extraordinary agility. The same explanation appears to apply to the case of many snake-charmers, as the periodic removal of the fangs is by no means a universal practice with these jugglers.

The third part of the volume is devoted to the serum-therapy of snake venom. After a short account of the discoveries that animals could be rendered immune to snake venoms by the repeated administration of small doses, the author describes his attempts in 1894 to ascertain whether antitoxins to venom were formed in the serum of an animal which could be used for therapeutic purposes, as had just previously been proved to be the case for diphtheria by Behring and Roux. The credit of first establishing this fact is due to Dr. Calmette although similar investigations with other venoms were being carried on more or less simultaneously by Phisalix and Fraser.

The details of the process of immunising horses for the purpose of procuring anti-venene are fully described and the difficulties encountered in the course of immunisation are explained. The important question from a practical point of view of the specificity of antitoxins procured by immunisation with different venoms receives very cursory treatment. Notwithstanding the evidence accumulated by the work of Lamb, Martin, Tidswell, Noguchi, and Brasil (which, moreover, is passed over in silence) to the effect that constituents of venoms which cause similar effects physiologically produce, as a rule, when injected into animals antitoxins which are markedly antagonistic *only* to their homologous venoms, Dr. Calmette represents that an antitoxin prepared by the injection of one neurotoxin, such as that contained in cobra poison, is efficacious against the neurotoxins of other venoms and that a serum prepared with the hæmorrhagin of crotalus poison will protect against all other hæmorrhagins. Unfortunately, the experience of all other experimenters in the field of venom-therapy militates against this view and indicates that anti-venomous sera are highly, although not strictly, specific, so that identity in physiological action does not justify the assumption that a serum prepared with one venom will neutralise another.

The chapter on the mechanism of the neutralisation of venom by antitoxin affords a rather one-sided presentation of the case. The limits of space, however, prevent us entering into a detailed criticism of what, after all, is an academic question and has, moreover, been well thrashed out during late years. The earliest experiments bearing on this subject were performed by Dr. Calmette but owing to inadequate attention to details regarding the conditions under which they were performed the results led him to adopt the view that the antitoxin did not combine with the toxin but operated in some obscure though beneficial manner upon the cells of the body, a view entertained at that time by Roux and Buchner. The possibility that a combination might have occurred and been broken by the action of heat was at the same time suggested by Dr. Calmette but no evidence was available to support this view. After reading this chapter we are unable to gather what may be the present views of Dr. Calmette regarding the nature of the antagonism between the toxin and antitoxin of snake venom. He seems, however, to regard the recent interesting experiments of Morgenroth who separated the toxin and antitoxin of cobra venom by the action of $\frac{1}{100}$ normal hydrochloric acid, as confirming his views, whatever they may be. In case, however, Dr. Calmette regards the dissociation by hydrochloric acid as imperilling the interpretation, very commonly adopted, that toxins and antitoxins chemically combine with one another, we may remind him that hydrochloric acid is a powerful reagent and that many even quite stable chemical compounds can be dissociated by it. On p. 266 the author explains that until recently it seemed impossible to deny that chemical combination was demonstrated but that "presently (? after Morgenroth's work and the slight deviation from the law of proportionality) we shall see that there is nothing in it!" At the end of the chapter, however, he claims to have *demonstrated* in 1894 "that if toxin and antitoxin form a chemical combination, this combination is unstable and able to be dissociated by *diverse* influences." We quite well remember the publication of his experiments and fail to see how any such conclusion could be drawn from them.

Chapter XV. is devoted to the practical treatment of snake-bite. For local treatment the author prefers the injection into the situation of the puncture of a solution of the hypochlorites to that of permanganate of potassium which was recommended by Lacerda in 1881. In either case the operation of the remedy is limited to destroying whatever portion of unabsorbed poison may be brought in contact with it. Once absorbed the only remedy is antitoxin. The technique of serum injection is fully described and from 10 to 30 cubic centimetres of serum, according to the severity of the symptoms, is the dose recommended. In grave cases intravenous injection is advised. The amount of serum which it is necessary to inject is calculated by the author on the assumption that the average amount injected by a cobra is 20 milligrammes of dry poison and that the fatal dose for a man is about 14 milligrammes. One cubic centimetre of the Lille serum being able to neutralise one milligramme of venom when mixed with it, Dr. Calmette concludes that six cubic centimetres would be adequate to prevent death if injected immediately after the inoculation of the poison but that in practice it is as well to inject a little more—viz., from 10 to 20 cubic centimetres. We cannot allow these conclusions to pass without comment. Dr. Calmette is probably not far out in his estimation of the fatal dose of cobra venom for man but his estimate of the amount of poison which an averaged-sized cobra may inject is, we believe, underestimated. Observations by Lamb in India showed that adult cobras freshly caught discharged more than ten times the amount of venom procured by Dr. Calmette from starved snakes after a long captivity. Moreover, in practice the antitoxin is not mixed with the venom before injection but at variable times subsequently, and both Fraser and Martin have shown that this makes a very great difference. We fully agree that antitoxin is the only remedy for snake-bite once the poison is absorbed but the doses recommended by Dr. Calmette require multiplying by ten to reach reasonable security and even this quantity would be inadequate in some cases. There are, no doubt, many cases of snake-bite in which for many reasons the snake does not inject its full complement of poison and for such treatment with a smaller quantity of serum would suffice. As about 30 per cent. of those bitten by cobras recover without treatment it is probable that the dose recommended by Dr. Calmette would be adequate for a number of cases but it must always be remembered that if

the larger amounts of serum are not injected the treatment may fail because more than a lethal dose of poison remains unneutralised.

The final chapters are devoted to the consideration of what is known of the venoms of creatures other than snakes. The possession of poisonous secretions, with some arrangements for introducing these into other beings, is spread over a large number of groups of the animal kingdom and a number of interesting observations upon these weapons of offence and defence are here collected, together with the additional attraction of portraits of the owners. The venoms and poison mechanism of sea anenomes, spiders and scorpions, various insects, the salamander, and the ornithorhynchus paradoxus, as well as the poisons secreted in the region of the sharp spines of not a few fishes, all receive attention.

The volume closes with a number of reports of cases of various forms of snake-bite treated with antivenene most of which recovered.

A System of Medicine. By Many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D. Cantab., LL D., D.Sc., F.R.C.P. Lond., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College; and HUMPHRY DAVY ROLLESTON, M.A., M.D. Cantab., F.R.C.P. Lond., Physician to St. George's Hospital and to the Victoria Hospital for Children, sometime Fellow of St. John's College, Cambridge. Vol. II., Part 1. London: Macmillan and Co. 1906. Pp. 1087. Price 25*s.* net.

THE original second volume of Sir T. Clifford Allbutt's "System of Medicine" is represented in this new edition by two parts, of which the volume before us is the first. It is devoted to a continuation of the infections and the intoxications, the consideration of which was commenced in the first volume. The first article is an important one on the Pathology of the Infections, which is divided into four sections, the opening one being a study of the relations of bacteria to disease, which is a revised form by Professor James Ritchie of an article by the late Professor A. A. Kanthack in the first edition; the remaining sections are new and are the work of Professor Ritchie. They comprise the study of the changes produced by bacteria in the animal body, immunity and bacteriology in relation to therapeutics. This article, which extends to 198 pages and includes a bibliography of 380 papers, is a very complete and exhaustive presentation of the present position of our knowledge of the general pathology of the infections and of the highly involved and difficult problems of immunity. The consideration of toxins, antitoxins, and of anti-bacterial processes in general is most thorough. The ingenious speculations of Ehrlich and the advances made therefrom are given in detail, while the criticisms to which they have been subjected are carefully and impartially considered. Professor Ritchie's style is frequently involved and at times not easy to follow but the highly technical character of the problems and the complex, unwieldy, and redundant nomenclature which has grown about this subject no doubt render it a matter of great difficulty to present the subject in simple language. The article is none the less a most valuable one and should be of the greatest use for reference. It undoubtedly represents a vast amount of labour and bears throughout the impress of thorough practical knowledge.

The articles on infective diseases of established bacteriology are next resumed from the first volume and that on Glanders and Farcy by Professor G. Sims Woodhead affords a very complete study of those conditions, the bacteriology and morbid anatomy being given in considerable detail. The article on Anthrax, produced as a result of the collaboration of the late Dr. J. H. Bell and Dr. Thomas M. Legge, has incorporated within it a great deal of the interesting work recorded by the latter in his Milroy lectures and is a very important and valuable contribution. The article on Tuberculosis, written by Dr. Sidney H. C. Martin, has been revised by Dr. W. Cecil Bosanquet. It forms a very clear and comprehensive *résumé* of the general pathology of that disease. The manner of infection and the modes of spread within the body are very carefully considered. In a brief section devoted to treatment a review is given of some of the chief methods adopted.

A new article on the Pathology of Streptothrix Infections is contributed by Mr. A. G. R. Foulerton. The morphology of streptothrix organisms and their cultural and staining properties is considered as well as their pathogenetic action. The identification and separation of these organisms are carefully described. Mr. Foulerton further discusses the place of the genus streptothrix in botanical classification and also the relationship of the bacillus tuberculosis to the group of acid-fast streptotricheæ to which he believes there are strong reasons for transferring this organism. The clinical characters of actinomycosis (streptotrichosis) are, as in the last edition, described by Dr. T. D. Acland. Mr. Jonathan Hutchinson's article on Constitutional Syphilis is a valuable summary of the general features of that disease and has been brought up to date. The spirochæta pallida is to be considered in a later volume. The various problems such as those of syphilis in relation to marriage and of second infection are critically discussed.

The third section of the book is devoted to Infective Diseases of Doubtful Nature. Measles and German measles are well described by Dr. Dawson Williams. The article on Scarlet Fever by Dr. F. Foord Caiger and Mr. Leonard S. Dudgeon contains some very interesting information in regard to the bacteriology of the disease and its hæmatology. The value of serum treatment is carefully discussed. The method of infection in scarlet fever and the question of "return" cases are both critically considered. Dr. Caiger agrees with the view that the infectivity of the discharges from the mouth, nose, and ear in this disease is much greater than that of the desquamated cuticle. Chicken-pox and Small-pox are described by Dr. John MacCombie. In the article on small-pox the recent work on the pathological anatomy is incorporated. The various initial rashes are described with great care and the diagnosis of the disease is very thoroughly discussed. Sir John W. Moore's article on Typhus Fever gives a very exhaustive account of that disease. A new article on Infectious Coryza is contributed by Dr. Dawson Williams and in it the predisposing conditions and bacteriology of "a common cold" are carefully considered. The finding of the micrococcus catarrhalis by various observers is described and it is regarded as probable that the same symptoms may be produced by various distinct organisms. Whooping-cough and Mumps are dealt with by Dr. Eustace Smith and Glandular Fever by Dr. Dawson Williams. The article on Rheumatic Fever by Sir W. S. Church is an exhaustive study of the disease. A section on the morbid anatomy and bacteriology of that disease is contributed by Dr. W. Bulloch. The discussion of the relation of the various organisms described in connexion with acute rheumatism, notably the bacillus of Achalme and the micrococcus of Poynton and Paine, is a most valuable piece of work. Dr. Bulloch concludes "that the etiology of rheumatic fever still belongs to the arcana of pathology, and although what clinicians call rheumatic fever is probably a specific infective disease, the virus is not known." Dr. W. B. Cheadle's article on the Acute Rheumatism of Childhood is an interesting account of that condition. The inclusion of rheumatic fever among the Infectious Diseases of Doubtful Origin is an alteration from the previous edition.

A section follows devoted to Infectious Disorders communicable from Animals to Man and includes articles on vaccinia, foot-and-mouth disease, and hydrophobia. The

Clinical Study of Vaccinia in Man by Dr. Acland is a most striking piece of work. The vast material accumulated is dealt with systematically and the consideration of vaccinal eruptions, vaccinal injuries alleged and real, and the many problems connected therewith, affords a very valuable monograph thoroughly up to date. Dr. S. Monckton Copeman deals with the Pathology of Vaccination and the Relationship of Variola and Vaccinia. Dr. J. C. McVail has produced an article on Vaccination as a Branch of Preventive Medicine, which replaces that on the same subject by the late Mr. Ernest Hart in the last edition. It includes very instructive statistical studies illustrating the value of vaccination as a means for controlling and preventing small-pox. Foot-and-mouth disease is described by Sir John McFadyean and hydrophobia by Professor Sims Woodhead. A short but interesting article on the Co-existence of Infectious Diseases by Dr. Foord Caiger concludes this section.

The remainder of the book is devoted to a consideration of the intoxications. A new article on Food Poisoning by Dr. H. Batty Shaw is a valuable addition. The manner in which various articles of diet may produce toxic conditions is described. In regard to toxic conditions following on the ingestion of food, it is urged that ptomaine poisoning is a rare, if not a doubtful, condition, and that in the majority of instances food poisoning is the result of pathogenetic organisms or their toxins. Grain poisoning is described by Sir T. Clifford Allbutt and Professor W. E. Dixon, and the symptoms and results of ergotism, pellagra, and lathyrism are given in detail. Dr. H. D. Rolleston's article on Alcoholism contains a great deal of valuable information clearly and succinctly expressed. Sir T. C. Allbutt and Professor Dixon have also contributed the article on opium and other intoxications, and Dr. Thomas Oliver supplies that on metallic and some other forms of poisoning, including poisonous trades. Both of these articles are thoroughly up to date and practical.

The volume as a whole is well worthy of the reputation of the editors and will sustain the position which the System has already won.

The Common Bacterial Infections of the Digestive Tract and the Intoxications arising from them. By C. A. HERTER, M.D., Professor of Pharmacology and Therapeutics in Columbia University, Consulting Physician to the City Hospital, New York. New York: The Macmillan Company. London: Macmillan and Co., Limited. 1907. Pp. 360. Price 6*s.* 6*d.* net.

OF the importance of a careful study of the bacterial flora of the alimentary canal there can be no doubt but the difficulty of the investigation, owing to the large number of organisms which are encountered, combined doubtless with the uninviting nature of research on the fæces, has so far prevented the attainment of much certainty as to the variations met with in health and disease. The book before us may be regarded as a pioneer attempt to reduce to order the observations already made and to indicate some at least of the paths to be followed in future research. With regard to the intestinal bacteria the question has been raised as to their possibly symbiotic character and usefulness in digestion. The present author does not seem to credit them with such importance. Their numbers vary in different parts of the intestine and at different periods of life, putrefactive organisms definitely increasing in number as life advances. At the same time the penetrability of the intestinal wall to bacterial invaders appears to decrease. The character of the food taken also influences the bacteria present in the gut. A very interesting study is that of the displacement of one form of organism by another according to changes in the medium afforded by the intestine. Thus in some diarrhœal conditions the common colon bacilli may almost entirely disappear. It is possible that these and other normal inhabitants of the gut may be of service by crowding out pathogenic forms which might otherwise gain a footing and cause disease. It is noteworthy that the bacillus coli has not the power of breaking up albuminous matter by itself but can only act on simpler products of digestion, such as peptones, provided for it by other agents.

We have not space to allude to many interesting suggestions made throughout this stimulating book. We may note, however, the view that the lesions of dysentery represent the effects of the elimination of a toxin by the intestinal glands rather than the direct local effects of a pathogenic organism, and the coincidence between the presence of special bacteria and conditions of severe anæmia. It seems that not only streptococci but bacillus aerogenes capsulatus and probably other germs give rise to hæmolytic poisons. The importance in pathology of substances such as indol, hydrogen sulphide, choline, and so forth is discussed, and the attempt is made to distinguish certain forms of intestinal decomposition which induce morbid symptoms—indolic, saccharo-butyric, and combined forms. Finally, suggestions are made as to the control and avoidance of such conditions. The book contains a careful study of the whole question and embodies the results of much original research. The author is to be congratulated upon the production of a valuable monograph.

LIBRARY TABLE.

Blood Examination and its Value in Tropical Diseases. By CLAUD F. FOTHERGILL. London: Henry Kimpton. 1907. Pp. 34. Price 2*s.* 6*d.* net.—The author of this excellent little manual is one of the pupils who have passed successfully through the London School of Tropical Medicine and having at that institution learnt practically the value of blood examination he has in the book before us written much that will be of use to medical men in the tropics. Such examination, as Professor Ronald Ross tells us in his preface, by the detection of parasites will at once give a definite diagnosis and a sure guide to treatment in malaria, filariasis, kala-azar, sleeping sickness, relapsing fever, and tick fever; various serum reactions are not less valuable; and blood counts are frequently of great assistance. The author gives a succinct description of the various forms of the malaria parasite; he draws attention to the great value of the blood examination in the diagnosis between malaria and enteric fever in the tropics and also to the differentiation of malaria from the many other diseases with which in times past it has been confused. He details the characteristics of all the chief tropical affections as regards their blood condition, such as those of dysentery, Malta fever, kala-azar, blackwater fever, plague, cholera, relapsing fever, leprosy, ankylostoma duodenale, and filariasis amongst others. After the perusal of this volume, which though small contains a large amount of information, we can recommend every practitioner in tropical countries to study it.

The Child, its Rearing, Development, and Ailments, with chapters on the Mother's Health and General Nursing: A Book for Parents and Nurses. Illustrated with reproductions of photographs and engravings. By Dr. W. M. FELDMAN, Lecturer on Midwifery, Infant Care, Hygiene, &c., to the London County Council; Surgeon to the Royal Maternity Charity. London: E. W. Rabbinowicz. 1907. Pp. 154. Price 1*s.* (In Yiddish.)—This book contains 15 chapters dealing with the care of children and their feeding and giving brief accounts of their minor ailments, sufficient, however, for those, such as parents and nurses, who have had no medical training. The employment of first aid in cases of accidents is also described and, what is quite as important, the means of preventing accidents. Three chapters are

devoted to the mother's health, the hygiene and minor disorders of pregnancy, and the hygiene of lying-in and lactation. A useful chapter on the essentials of general nursing closes the book and supplies instructions for taking the temperature and the pulse, on giving enemas, on the prevention of bedsores, and similar matters. The book (which contains some illustrations) is just what is wanted for those who have the care of children and the advice is judicious and well put. It is written in Yiddish, the language spoken by the majority of East End Jews. Yiddish is, of course, merely the English spelling of "Jüdisch" or Jewish. The language is based on German, for most of the words and the grammar are German, but there are mixed therewith many Hebrew words and many Slavonic words, chiefly coming from Polish, but Yiddish is always printed in the Hebrew square character. It suggests Butler's description of Hudibras's speech: "A Babylonish dialect. It was a parti-colour'd dress of patch'd and piebald languages: 'Twas English cut on Greek and Latin." Yiddish is, however, a language of importance, for it is spoken by many thousands in London and by millions elsewhere and has an extensive literature of a kind; even in London plays are acted in Yiddish and many journals written in it appear.

Christmas and New Year Cards, &c.—The arrival from Messrs. Raphael Tuck and Sons of Moorfields, London, E.C., of a goodly collection of Christmas and New Year cards, calendars, gift-books, toy-books, and post-cards is a reminder of the near approach of the season of good cheer. Messrs. Tuck are so eminently masters of their art and craft that it will suffice to say that their productions this year, as heretofore, are marked by good taste both in design and workmanship, whilst their ever-increasing catalogue of these messengers of goodwill is the best testimony to the popularity which they enjoy.

JOURNALS AND MAGAZINES.

The Journal of Mental Science.—The July number of this journal contains the third part of Dr. J. S. Bolton's article on Amentia and Dementia. He discusses somewhat fully the disorder commonly known as dementia præcox but he himself prefers to speak of the condition as "premature dementia." He considers that the cause of the mental failure in persons suffering from premature dementia is to be found in an immature condition of the centres of association of the cerebrum. The concluding part of the paper by Wilhelm Specht of the University of Tübingen on the Clinical Measurement of Fatigue is also to be found in this number. It is a translation from the German by Dr. Thomas Johnstone and is a valuable piece of work, for the author states that the method described has to the fullest extent made good its claim to be a means of detecting intentional simulation. This is very important, for it may be a means of detecting fraud in persons suffering from traumatic neuroses. The author states that "the measurement of fatigue in traumatic neuroses in particular has shown that the patients' liability to fatigue is greatly increased, that they have very little power of recovery, and that their capacity for work is much reduced." The next article is a Contribution to the Study of Dementia Paralytica in Brazil by Dr. Juliano Moreira, medical director of the National Hospital for the Insane, Rio de Janeiro, and Dr. Antonio Penafiel, his late assistant. This paper is largely a compilation of useful facts and statistics. Dr. C. J. Shaw gives an instructive article on the Liability of the Insane to Tubercular Infection as demonstrated by an Examination of the Tuberculo-opsonic Index. This is followed by a paper on the Care of Children in County and Borough Asylums, by Dr. C. H. Fennell. The New Hospital at Ayr Asylum forms the subject matter of another paper; it is written by Dr. C. C. Easterbrook who has recently been trying the open-air treatment in beds for the acute insane at this institution. The Deputy Commissioner in Lunacy for Scotland, Dr. J. F. Sutherland, contributes a most interesting article on Recidivism from the Environmental and Psychopathological Standpoints. Dr. W. Ford Robertson and Dr. G. Douglas McRae furnish Further Bacteriological and Experimental Investigations into the Pathology of General Paralysis and Tabes Dorsalis. This paper is the one that was read before the quarterly meeting of the Medico-Psychological Association in May, 1907, and this number of the journal also contains the discussion which followed on the reading of this paper and the criticisms made on it by Dr. D. Ferrier, Dr. J. W. H. Eyre, and Dr. C. E. Beevor.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Nov. 21st, 1829.

Some years ago I had occasion to attend a young female—a slender young girl, in a serious attack of inflammation in the *chest*. I bled her not very sparingly, and adopted other antiphlogistic treatment, but I found it necessary to repeat the bleeding several times; and after a considerable number of bleedings, the inflammation was not yet satisfactorily reduced. The symptoms of inflammatory disorder in the chest continued, and I deemed the patient in danger. Still her circulation was reduced to that state in which I could not take more blood from her. I then resorted to the use of *digitalis*—nearly *poisoned* her with it, I believe—however, through the means I used, or in consequence of her possessing a pretty good constitution, she recovered. It happened two or three years afterwards, that I had occasion to treat her again for a complaint of this kind. She was a servant in a public institution with which I am connected, and I was requested to see her, having been accidentally at the establishment. I had previously seen her in the course of the week before this occurred. She had wanted a tooth taken out, which I removed for her, and that was attended with a great deal of swelling about the jaw and throat, so that I found it necessary to apply leeches to the parts. By the end of the week, I was called to see her, and I found her labouring under symptoms of the highest degree of inflammation of the chest. Though she had been attacked only two or three hours when I saw her, the symptoms were very severe; there was excessive pain, so that she could hardly command her breathing; flushing, and great heat over the whole body; white tongue, and a highly-disturbed state of the pulse, full, strong, and very frequent; I never saw symptoms proceed to so great a degree in so short a time. The case was very favourable, I thought, for trying depletion to a great extent, I therefore bound up her arm and bled her; she was a rather slender, weakish young woman, as I have already said. The blood spouted out most vigorously from the vein of the arm. I had got a good large vessel; it ran into it famously; and really, in cases of inflammation, where the blood runs freely out of the vein, I generally let it run on till it stops for that seems to me to be the only way of doing good, and I fully intended to have gone on till this young woman fainted; but, to my astonishment, though I had taken away an enormous quantity, she did not faint, and still the blood run out in a vigorous stream into the vessel, without touching the surface of the arm, to the very last. In the end I stopped it, because the quantity did seem to me to be so very great. I had the blood weighed afterwards, and it weighed *three pounds;* that is, *eight and forty ounces!* I believe it was an ounce or two more; however, it was not less, and yet that evacuation did not make that young woman faint. Now, that single venesection cured her; she was well from that time; all the symptoms were removed; she had no further symptom whatever indicating inflammation of the chest. She kept very quiet for two or three days, took opening medicines, and was restricted to a low diet; but really I may say she required no further treatment but that single venesection.[1]

[1] Excerpt from "Lectures on Surgery, Medical and Operative,' delivered at St. Bartholomew's Hospital by Mr. Lawrence. Lecture VIII. Treatment of Inflammation.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 23, 1907.

Medical Men and Municipal Life.

THE routine work of the general medical practitioner is not such as lends itself to notoriety and publicity in the sense which attends the career of the politician, the preacher, or the pleader. Medicine and surgery, in the stricter interpretation of the terms, concern themselves almost solely with individual disease and ill-health, and most of the work of the profession is of necessity of a quiet unostentatious character, carried out by the bedside of the patient in the homes of the people. No insignificant portion of its labours, especially amongst the poor, is of a type of which the public in its corporate capacity can know little or nothing, save by inference from the skill and kindness which individuals have received at the hands of their medical attendants. By the very nature of things the story of the work of the profession can never be told, seeing that it concerns itself with that side of life over which the veil is in large part drawn; it would be, perhaps, a somewhat monotonous recital of averted and postponed death, of suffering relieved, of sorrow lessened. The work of the profession, indeed, takes the form of a great silent river of routine duty the very existence of which is only brought before the public gaze by some specially heroic deed or by the occurrence of those occasional wrecks which must at times be found upon the banks of every busy, ever-running stream. It would be a sorry day for medicine were the high aspirations which guide it to become tarnished and were greed for notoriety to lead it from its ideals. But although this is true of medicine as a whole, the profession presents certain aspects which make the participation of medical men in public life an absolute necessity. The bulk of our art, science, and handicraft is concerned with the treatment of disease: that is its *raison d'être*, its apology for its existence, and its means of subsistence. Were there no disease there would be no medical profession in the sense in which it is understood to-day. But, strange as it may appear to the commercially minded, there is gradually pervading its mass, visible as yet in one small portion alone, a sort of metamorphosis which is clearly one day to spread throughout its being and to result, it might perhaps be thought, in the extinction of the profession, as the trend of this spirit of change has for its object no less a goal than the prevention of disease; of the disease, that is to say, which is to-day the financial mainstay of the profession. But gauged by the rate of progress of this preventive medicine, this neoplasm of public health, there will apparently be ample time for the profession, should it wish to do so, to adapt itself to the altered conditions. Moreover, we find the profession encouraging and promoting this new growth by every means in its power. There is, so far as we are aware, nothing corresponding to this self-extinction process at work in any other profession and critics of our calling may well take note of it.

This preventive side of medicine is at present largely confined to sanitary authorities sometimes acting, but often not acting, on the advice of medical officers of health. As a too general rule these authorities are composed of men whose knowledge of sanitary science is very small, and in not a few instances of those whose interests are opposed to all reforms which may affect the jerry-builder or the owner of private slaughter-houses or of overcrowded dwellings. The teaching of hygiene in our schools and the medical inspection of school children are not matters which strongly appeal to them; and they look with suspicion upon attempts to limit the employment of children or otherwise to interfere between employer and employed. It is in these circumstances that the advent of the medical man on municipal bodies must be greeted as a healthful sign of the progress of preventive medicine, for it means the participation in public life of men who have done, perhaps largely, their share of clinical medicine and who desire to further the progress of this great disease-prevention movement. There can be no question as to the value of the presence of medical men upon public bodies alike to these bodies themselves, to the public, and to the profession; and the fact that members of our calling are being elected in an increasing degree manifests their public spirit and reasonable citizenship. It is, however, of the utmost importance for the good of the public that the men who thus seek office should be some of the best types of professional life, men who, while taking a broad view of human affairs, will always remember that they are medical men. It is therefore gratifying to us to find that there is a growing tendency on the part of the public to appreciate the presence of medical men upon municipal bodies and to confer upon them the highest civic honours—a fact which is both complimentary to the *personnel* of our colleagues and full of promise for the progress of preventive medicine. Of this appreciative movement the recent mayoral lists bear ample testimony. First and foremost honourable mention has to be made of the selection of the first medical Lord Mayor of Liverpool in the person of Dr. RICHARD CATON, consulting physician to the Royal Infirmary and emeritus professor of physiology in the University of Liverpool, an election which we chronicle with the greatest pleasure, as in harmony with the leading part which this great city of the empire has taken in promoting the growth of tropical medicine in all parts of our realms. But there are other appointments which are in their way not less gratifying to the profession and which show at the same time the popularity of the men themselves. For instance, at New Romney Mr. R. R. DAGLISH has received the honour of mayoralty for the ninth time since 1885, while the Montgomery records announce that Mr. N. W. FAIRLES-HUMPHREYS has eight times been mayor. But the blue riband for medical mayors must be accorded to the historic borough of Saffron Walden in Essex, where during the latter half of the eighteenth century the civic chair was occupied by medical mayors on six occasions, during the nineteenth century 17 times, while

the century in which we are now living has already seen three medical men in the highest municipal post. In another column of our present issue (p. 1483) will be found a list of medical mayors, but these allusions to a few only of the numerous civic honours suffice to indicate that the services of medical men are coming into recognition, and that the members of our great profession are not lacking in the larger human sympathy or in that sense of proportion which is an essential element in successful municipal administration.

The Provision of a Street Ambulance Service for the Metropolis.

FOR some time past, and especially during the last three years, we have brought prominently before our readers' notice the pressing need of an efficient and coördinated street ambulance service for London and we have followed in our columns the efforts of the Metropolitan Street Ambulance Association towards the attainment of that end. It would therefore be a reiteration to insist how far we in London are behind other cities in this most necessary public service, for the example of New York, Liverpool, and other places has often been held up to our readers. Two factors cause us again to review the situation as it stands at present, one being the success with which the motor ambulance service inaugurated by the City police force has met, and the other the fact that a Departmental Parliamentary Committee has the matter still under consideration. When the necessity for a systematised ambulance service first came prominently forward the London County Council was the body in which the hope of its solution was chiefly vested, and as far back as 1902 a sub-committee of that council issued a report on the subject. Nothing further came of it for two years, however, and at the beginning of 1904 the medical profession in London bestirred itself to reawaken public and official interest in the amendment of a state of affairs which was a standing reproach to the metropolis. The Metropolitan Street Ambulance Association was then founded, a body which has ever since enjoyed a large membership including many leaders of the profession and all classes of medical men who are in any way concerned in dealing with cases of accident or sudden illness occurring in the streets. At the inaugural meeting Mr. REGINALD HARRISON, the President of the Association, stated that its objects were "to secure for London with as little delay as possible an efficient street ambulance service for accidents and medical casualties," and he pointed out that not only was it estimated that from 8000 to 10,000 severe accident cases were taken annually to London hospitals or elsewhere in cabs or carts or other unsuitable conveyances, but that the state of the unfortunate sufferers was often made much worse by such conveyance, simple fractures being made compound and surgical shock being greatly increased, to quote only two of his examples. He strongly advocated, on irrefutable grounds, the establishment of a horse or motor ambulance service and his opinions were not less strongly supported by the association. In the same year influential deputations of the association waited upon the London County Council and upon the City police authorities to express these views and were sympathetically received. As is well known, the latter took the matter in hand, with the result that during this year an admirable motor ambulance service has been established in the City area.

The suggestion made at that time to the London County Council was that the proposed service might be administered through the existing organisation of the Metropolitan Fire Brigade, but subsequent deliberation has decided that the police force is a more suitable body to be charged with its duties. The London County Council recognised the importance of the matter and in July, 1905, applied to Parliament for powers to take it in hand. When the General Powers Act was granted to that body in the following year, however, the ambulance clauses had been expunged in committee, and to Lord MONKSWELL'S protest against this action on the third reading of the Bill in the Upper House the chairman of the committee replied that it was impossible to pass a scheme of which no details had been given. The upshot of the matter was that the Home Office at the end of last year appointed a departmental committee, consisting of Sir KENELM E. DIGBY, K.C., the Earl of STAMFORD, and Sir WILLIAM COLLINS, M.P., and this body is taking evidence "as to the provision made for dealing with cases of accident and sudden illness in the streets and public places within the metropolis, to report whether any, and if so what, improvements in ambulance provisions are necessary and desirable and how they could be best effected with due regard to efficiency and economy." Meanwhile the Metropolitan Street Ambulance Association has continued to keep alive interest in the matter, largely by bringing before Members of Parliament and the London County Council its great urgency; while in February last a conference of many public bodies met at the Gray's Inn Hall and, after witnessing a display of ambulance work and equipment, advocated a coördination of the existing services.

It must be remembered that the question at issue concerns a street ambulance alone. Provision has been made by the Metropolitan Asylums Board for the transport of infectious cases from house to hospital, and non-infectious cases can command the services of the St. John Ambulance Corps which also, of course, does excellent service in the streets on special occasions when large concourses of people are expected, as do also the London Companies of the Volunteer Medical Staff Corps. It is for the daily service of the streets that the new organisation is required. Roughly speaking, 75 per cent. of all street accident cases occur within the four-mile radius of Charing Cross and these are transferred to hospital in cabs, and carts, or by the police in hand-litters or Bischoffsheim or other wheeled litters, except within the City area, where, as we have said, the success of a motor ambulance system under control of the police has been amply shown within the present year. We are in favour of this system being extended to the metropolitan police, and it would be as well if it were first installed within the four-mile radius, for although the jurisdiction of this force extends for a radius of 16 miles or so, it would be prudent to establish the system in smooth working order in the central area before seeking to institute it in the safer suburbs. The principles upon which it should be worked have been more than once placed before our readers in connexion with the City's new service. They are briefly,

the provision of motor ambulances at various centres in telephonic communication through a central bureau, with numerous call-boxes in the streets under the control of the constables on duty, all of whom would be trained to render first-aid. More experienced ambulance men would accompany the car to the scene of the accident, take charge of the patient, and convey him to the hospital, a system which has the additional advantage of enabling the policeman to remain on his beat. We have on previous occasions spoken strongly about the urgent necessity of replacing hand-litters by motor or horse ambulances and our main object now is to support the scheme which would put the control of the street ambulance service of London in the entire charge of the police force, a body of men in whom the public have rightly every confidence. We are glad to recall in conclusion that Sir WILLIAM COLLINS, a member of the Parliamentary Committee now sitting, has thus expressed himself in the public press. "As a hospital surgeon I can testify that the present method of bringing injured persons into hospitals in hansoms and four-wheelers is cruel and fraught with grave peril to the injured," an opinion to which all who have any experience of hospital work will subscribe.

The Relationship between Human and Avian Tuberculosis.

FEW of the many problems connected with the tubercle bacillus have received more consideration than that of the relationship of the forms of that organism found in tuberculous lesions in man to those found in the lesions of the similar diseases of other animals. Since the startling pronouncement of KOCH in 1901 in regard to the non-infectivity of the bovine bacillus for man the relationship of the human and bovine diseases to one another has engrossed the attention of pathologists and sanitarians to such an extent that other forms have been but little studied. The reports of the Commissions appointed in Germany and in this country to investigate this particular aspect of the general problem have incontestably proved that bacilli derived from bovine sources are pathogenic for man; indeed, that from cases of tuberculosis in man two types of bacilli can be obtained, one with properties identical with those of bovine bacilli and the other with a much less virulence for bovines and rabbits constituting the human type. The more fundamental question as to whether the two types are actually different organisms or simply modifications of a single organism produced by repeated passage through certain animals cannot at present be said to be settled definitively, although some of the experiments recorded by the British Commission point rather strongly to the latter view. Similar questions arise in regard to the bacilli of human and avian tuberculosis. It has long been known that birds, especially birds in captivity, are subject to a form of disease affecting the lungs, intestine, and other organs produced by an organism like the tubercle bacillus but showing certain differences in biological and pathogenic properties.

An interesting paper dealing with the relationship between avian and human tuberculosis was communicated to the Pathological Section of the Royal Society of Medicine on Nov. 19th by Mr. S. G. SHATTOCK, Dr. C. G. SELIGMANN, Mr. L. S. DUDGEON, and Dr. J. N. PANTON and will be found at p. 1443 of this issue of THE LANCET. They point out the practical importance of the question in view of the extensive use of birds as articles of diet by man. Their experiments were carefully devised to elucidate certain definite points at issue, of which the first was to determine whether birds could be infected with tuberculosis by means of bacilli from human sources. It was found that feeding pigeons upon materials to which human tuberculous sputum was added gave uniformly negative results, although the bacilli were absorbed and, at any rate in one case, deposited in the spleen without producing any lesion. On investigating the effects of inoculation with tuberculous sputum from man into pigeons, in only two out of six pigeons injected was a tuberculous lesion obtained and then it was a slight local tuberculosis. On inoculation of pigeons with tuberculous material derived from guinea-pigs which had been inoculated with human tuberculous sputum, in some cases local lesions were obtained, but it was found that these lesions tended towards retrogression rather than progression, and the general conclusion which was deduced was that birds show a high resistance to infection with the human bacillus. Avian tuberculosis is apparently common since it was found in 150 out of 500 necropsies on birds dying in the Zoological Society's gardens, and experiments were made to contrast with those just mentioned, using bacilli from avian sources. These were found to have a high infectivity for pigeons and a low one for guinea-pigs, in which animal inoculation with tuberculous material from birds produced a local lesion without visceral implication. The process sometimes involved the neighbouring lymphatic glands, but even then, if the animals were kept for some time, there was a tendency to retrogression. Feeding a monkey with tuberculous material derived from birds gave a negative result. It is thus evident that the avian bacillus has a markedly pathogenic action for the bird but has little or none for the guinea-pig and monkey, while the human bacillus is only very slightly pathogenic to the bird but, as is well known, markedly so for the guinea-pig and monkey.

Mr. SHATTOCK and his co-workers next endeavoured to determine whether the human bacillus was convertible into the avian by inoculation into the bird—i.e., by "passage"—and they came to the conclusion that it is not; in other words, that the two organisms are not identical. It appears to us, however, that their experiments on this point are not exhaustive enough to render this conclusion convincing. One of the features of the tubercle bacillus, as is pointed out in the recent report of the British Royal Commission on Tuberculosis to which we have already referred, is its relative stability, and in the "passage" experiments made by the Royal Commission a series of animals were generally employed and not a single one as in the experiments under discussion. It would require passage through a number of birds of the same species to settle the question definitely. It would also be of interest to know what would be the effects of inoculation of other birds from the lesions produced in the few cases which were infected from human sources. An interesting series of observations were made by an ingenious application of

the fact that saturation of an immune serum with tubercle bacilli reduces the opsonic content of that serum very markedly—indeed, almost to removal. It was found that the avian bacillus was as effective as the human bacillus in this respect, an observation which might be taken as pointing to the identity of the two organisms. This indication, however, the writers of the paper reject, since two of their number (Mr. SHATTOCK and Mr. DUDGEON) have found that the opsonin may be extracted from tuberculous serum by other substances, such as a thick suspension of melanin and that it is, therefore, rather a mechanical than a specific action. The general outcome of these experiments seems to indicate that birds are usually infected from avian sources and not from human, a conclusion which is in general accord with those of LYDIA RABINOWITSCH who found, however, that certain birds, such as parrots, might become infected from human sources.

Annotations.

"Ne quid nimis."

ALPINE MISADVENTURE: THE STATISTICS OF 1907.

"THE playground of Europe," as Sir Leslie Stephen called the Swiss Alps, has for many been a graveyard—a fact which experience from year to year emphasises rather than modifies. Statistics officially compiled for 1907 supply us with the death-rate due to misadventure in the year now closing on the Alps—Italian, Swiss, and Austrian—and those of Dauphiné. Actual loss of life is noted in 75 cases, the majority of the victims being divided between Swiss and German "peak-stormers"; next in number are those from the British Isles; and then come the Italians. Among the causes of this fatality that which overtops all others is the foolhardiness (every year more prevalent) of essaying the more difficult ascents without a guide; in many cases, moreover, without even a companion. The Alps which figure first in the black list as the scene of most frequent "misadventure" are those of Central Switzerland—the Bernese Oberland particularly; next come the Graian Alps, the highest peak of which is the Gran Paradiso, and the Pennine range culminating in Mont Blanc and Monte Rosa. Among the "incidents of fatality" 14 are classed under the head of "flower-gathering in dangerous localities," the edelweiss tempting the majority of victims. Of those thus lured to their destruction there were two ladies of mature years, two young ladies, and three young men. Accidents not terminating fatally but more or less grave were 350—some not figuring in that number from not having been reported or registered. As a "prophylactic measure" the compilers of the above statistics recommend "international action" on the part of Switzerland, France, Italy, and Austria to make the ascent of dangerous mountains prohibitive unless the adventurer is accompanied by a duly qualified and accredited guide. So escorted he might be spared even such risks as that which cost the young student Herr Mancken his life, only a few days ago, when clambering up the Jungfrau—a mass of ice, loosened by the summer heat, having finally detached itself and crushed the unfortunate youth. Even such causes of danger cannot always be foreseen and allowed for, but there is one consideration which it is never superfluous or inopportune to insist upon and that is the state of health of the Alpine climber. In fact, some 12 years ago a congress of Swiss medical men, convened at Arosa, issued, after full discussion, a unanimous recommendation that professional assistance should be available at the stations both of departure and arrival of even the funicular mountain railways, to save the traveller from the danger of being "ballooned up" to an altitude of several thousand feet with what Sir William Gull used to call "a tired heart," and also, in case of sudden cardiac failure at the terminus, to render all assistance possible. In truth, as was pointed out in THE LANCET'S comments on the congress referred to, many cases of so-called "misadventure" are simply cases of instantaneous arrest of the heart's action on the brink of a crevasse or other danger point. This was exemplified in the tragic fate of Baron Peccoz, an enthusiastic Belgian "peak-stormer" who, some 12 years ago, in presence of Queen Margherita (now the Dowager) dropped down dead when "negotiating" one of those critical "hazards" on the Lyskamm. There was no misplaced footing or loss of balance due to a false step but the sudden failure of a heart known to be atheromatous and exhausted by many hours' exertion.

THE BRISTOL ROYAL INFIRMARY AND THE PLURALITY OF HOSPITAL APPOINTMENTS.

WE have on several occasions referred to the strained relations existing between the medical and surgical staff of the Bristol Royal Infirmary on the one hand and the managing body of that institution on the other. It will be remembered that the difficulty arose from an attempt to restrict future physicians or surgeons to that hospital both in respect of holding other public appointments and in respect of the nature of their professional practice. The medical and surgical staff were willing to make certain concessions but some of the committee's proposals were stoutly resisted. The attitude of the committee in regard to this serious question may be inferred from the fact that on its instructions the secretary issued a circular to the governors claiming that "the committee are just as anxious as anyone else can be to deal with medical men in a sympathetic and kindly spirit, but they cannot allow the private interests of the holders of future appointments to interfere with the efficient working of the Infirmary." We now learn that the objectionable features of these proposals have been withdrawn. This result is a satisfactory illustration of the advantages of professional unity.

THE SMOKE NUISANCE.

THAT section of the Public Health Act, 1891, which deals with the smoke nuisance needs amendment badly. We object, to begin with, to any exemptions whatever remaining in force because we are convinced that no trade operations necessarily imply the production of smoke. In cases in which the smoke reacted injuriously on the products of the manufacturers themselves it has been abolished. Not only, moreover, was the defilement of the air by smoke prevented but the manufacturers have confessed that by employing smoke-preventing appliances they have saved money and have economised fuel. Only last week at a meeting in Manchester a manufacturer stated that at the factories with which he was connected, although perhaps 200 tons of coal per week were consumed, no smoke was made. He did not say that no dense smoke was made; he said no smoke was made. No sign that fire was beneath the tops of the chimneys could be observed. That great change had been accomplished, he added, with economy in working expenses and at the same time a better result had been obtained than by the most careful hand-firing. Such testimony as this is a complete answer to those who write us down as mere faddists who speak, they say, in utter ignorance of the peculiar requirements of manufacturing processes, whose only idea is to have a clean air at the risk of ruining industrial prosperity. Then, again, according to

the Act, a certain colour must be a damning quality, the smoke must be black before it can be held to be a nuisance. This is manifestly absurd, as yellow, green, or blue smoke may effect contaminating influences upon the air presenting the same intensity as black smoke, if not indeed a greater. Most travellers by railway through manufacturing districts will easily recall the dense, yellowish outpourings of certain factory chimneys. Take, for example, the cement works. Can anybody assert that this yellow smoke is not as injurious as black smoke? As a matter of fact, the yellow smoke from cement works, foundries, and smelting works is known to be more devastating to vegetation than any other kind of smoke. If smoke is devastating to vegetation it is pretty certain to have injurious effects upon man. Yet such smoke is exempted from the provisions of the Act because it is not black. As well stipulate, it seems to us, that any sewage, so long as it was not black, might be put into a river. We repeat that the smoke clauses in the Public Health Act badly need amending if the towns, villages, streets, and lanes, and the people are to be protected from smoke and its poisonous and offensive effects. This view, we are glad to say, is gaining ground and such meetings as that held on Monday last by the Institute of Hygiene, which we notice in another column, will help to spread it in a valuable manner.

THE LONDON GRADUATES' UNION.

THE London Graduates' Union was founded in 1900 for the purpose of aiding in the selection of suitable candidates for seats on the Senate of the University of London and of circulating from time to time information about the University. It was founded on strictly non-partisan lines but has recently been compelled to alter its policy in view of the action of the London Graduates' Association. This latter body, as we are informed, has constituted itself into an association for promoting the election by convocation to the Senate of candidates representing the views of external students alone and for opposing the election of any recognised teacher. The object of the Union, of which Sir Thomas Barlow is President, is "to prevent convocation being condemned to this partisan attitude. It regards convocation as the common meeting ground of all graduates, who shall all, whether internal or external, work together on convocation for the common good." It is hoped to arrange a conference with the Graduates' Association to harmonise these unfortunate differences and we shall be happy to hear that some settlement has been effected. In the meantime, we have received the first number of *The London Graduate* which is a little "bulletin" edited by a committee appointed by the council of the Union with the object of furthering the objects of the Union in aiding and promoting the development of the University as a whole and of "keeping the graduates and teachers of the University accurately informed as to all matters of importance and interest connected with the University." The bulletin has been started unpretentiously and it is to be hoped that future support will enable it to develop itself materially; it will do good service by bringing forward the objects of the London Graduates' Union and still more by fostering that solidarity of which the University stands in almost as much need as it does of funds. The present number contains a preliminary article on the University outlook, an interesting paper on Music in the University, and notes from many of its schools. We are surprised that no mention is made of the approaching senatorial election, the more especially as one of the main objects of the Union is to secure the election of candidates to the Senate who have the Union's interest at heart. All graduates and teachers of the University are invited to become members of the Union. The nominal subscription of 2*s.* 6*d.* may be sent to the secretary of the London Graduates' Union, 8, Collingwood-avenue, Muswell-hill. May we suggest that in future bulletins the news from the great school of medicine at Smithfield should not be headed "Bart.'s Hospital." We note that St. George is awarded his full hagiological dignity.

THE MIGHT OF THE INFINITESIMALLY SMALL.

THE application of a few drops of oil is often the secret of an enormous piece of machinery doing its work smoothly and well, the work accomplished being out of all proportion to the quantity of lubricant used. On the other hand, a little grit may effectually stop the machine. Little things may serve therefore either to retard or to accelerate highly important processes. We know what infinitesimally small quantities of certain substances will put an end to the great vital processes and we know also how endless appears to be the action of the enzymes or ferments which render food assimilable so that the same vital processes are sustained. A thirtieth part of a grain of aconitine will kill the human organism, one part of an enzyme will transform 100,000 parts of cane sugar into invert sugar, the enzyme of malt will convert a thousand times its weight of starch into sugar, and so forth. Nor is the enormous action of infinitesimally small quantities confined to the organic or organised world. Even certain materials devoid of life are found to exert a similar action. Platinum, for example, in the colloidal state is capable of decomposing 1,000,000 times its weight of hydrogen peroxide into water and oxygen and then of remaining as strong and as active as ever. Perhaps the most remarkable fact in connexion with the extraordinary "vitality" of colloidal platinum is that its energies are at once paralysed by such ordinary animal poisons as prussic acid, corrosive sublimate, or sulphuretted hydrogen. The platinum may thus be said to be poisoned and such a small quantity as one-millionth of a grain of prussic acid is sufficient to prevent this great transforming power. To give another example of the decided effect of minute traces of various substances it has been found that certain water organisms are destroyed in water contained in a copper vessel and yet the quantity of copper present is only one part in a thousand million parts of water. Such effects are impressive and they are calculated to impress us still more when we contemplate the number of processes going on in the human machine which are dependent upon the action of small things. The great processes of oxidation depend upon small things; the small amount of iron in the hæmoglobin probably controls its great oxygen-carrying property. The minute amount of arsenic and iodine in the thyroid gland probably plays a rôle of great importance; the enzymes are mighty and the atom also.

RHEUMATOID ARTHRITIS.

IT is sometimes brought forward as a reproach to medical science that some of the commonest diseases are least understood, and a conspicuous example of an affection which constitutes a stumbling-block of this kind is presented by the condition or group of conditions labelled "rheumatoid arthritis." It is satisfactory to note that a determined effort is being made to remedy this defect in our knowledge. The recently issued *Bulletin of the Committee for the Study of Special Diseases* at Cambridge contains a series of valuable articles dealing with this disease. The etiology of the malady is discussed by Mr. T. S. P. Strangeways and Dr. J. Barnes Burt, the basis of their paper being a series of 200 cases, half derived from private patients belonging to the more well-to-do classes and half from hospital patients. The preponderance of female sufferers is illustrated by

these statistics and also the effects of debilitating conditions of all kinds, mental and physical, as predisposing causes: a sudden onset is apparently not very uncommon. The same writers deal with the skiagraphic appearances of affected joints, Mr. Strangeways further comparing the x ray photographs of dead specimens with the actual conditions found on dissection of the joints, while the morbid histology of the malady is described by Dr. G. W. Nicholson. These investigations strongly support the view that at least two distinct conditions are included under the name of rheumatoid arthritis, one characterised by erosion of cartilages and rarefaction of the bones forming the joint, and the other by condensation of these bones and a tendency to ankylosis, as well as to formation of bony outgrowths round the joints. It is noteworthy that one case which clinically was typical of rheumatoid change proved to be in reality an example of chronic gout, and that the skiagraphic appearances of the second class described above were also indistinguishable from those met with in gouty persons. Dr. A. W. Wakefield has found good results to ensue, so far as relief from pain and stiffness are concerned, from the application of Bier's method of passive congestion. Unfortunately in many cases the efficacy of the procedure seems to diminish with repetition. Further communications on the same disease are promised and we await their appearance with interest. Meanwhile the issue before us (August, 1907, Vol. I., Nos. 3–9) may be commended to the attention of all who are interested in the pathology of a most troublesome and obscure condition.

WOMEN AND CHILDREN IN PUBLIC-HOUSES.

MANY of our readers have probably seen a Home Office return relating to the frequenting by women and children of public-houses. The return or report in question is in the form of replies to inquiries addressed by the Secretary of State to the Commissioner of Police of London and to the chief constables of Birmingham, Bristol, Leeds, Liverpool, Manchester, and Sheffield as to the practice in their districts of women and children frequenting public-houses. The answers make melancholy reading but they are hardly a revelation to our readers. In THE LANCET of some two years ago[1] the question so far as women in London were concerned was dealt with at some length and it was then shown that in almost all parts of the metropolis women were frequenters of, and good clients at, the drinking bars. From the return just published we may see that women and children in all the large towns that contributed to the contents of the report resort to public-houses in great numbers, the women taking with them very young children or infants in arms. It is also not uncommon for the public-houses to shelter other youthful visitors, under the age of 16 years always, and the majority being not older than seven or eight, who do not seem to be there so entirely without motive as those taken by their parents. The figures given by the various chief constables have not been obtained with the object of forming any statistical summary, at any rate they do not lend themselves to such a summary, for the observations were not made upon any definite or uniform principle. However, the fact is made clearly evident that many more women and children may be found in public-houses in certain districts of our large cities than the ordinary citizen is aware of. The Commissioner of Police of the metropolis alludes to the practice of parents inducing children to sip strong drink and also states that during the year ending April 30th last 1058 persons were apprehended in London for being drunk whilst in charge of children apparently under seven years of age. Of these, 220 were men and 838 were women. It would be superfluous to dilate upon so glaring an evil, whilst it is easy to say that repressive measures of the strictest character should be brought into force as quickly as possible. But we do not envy the legislature which undertakes the framing of the Act.

[1] THE LANCET, Dec. 9th, 1905, p. 1731.

INFECTIVE CHOLANGITIS.

INFECTIVE cholangitis has received attention from clinicians only in recent years. In the *Western Canada Medical Journal* for October Dr. Sidney H. C. Martin has reported a case remarkable from its rapid course. A man, aged 52 years, was admitted into hospital suffering from abdominal pain, jaundice, and irregular pyrexia. The history was that three weeks previously he began to suffer from discomfort after food and noticed that he was becoming slightly yellow. The jaundice and pain increased, and the latter had no relation to the taking of food. There was no vomiting. The patient had always been temperate and had been a total abstainer for 27 years. On admission he was deeply jaundiced and the edge of the liver was felt two inches below the ribs. Pain and tenderness were limited to the hepatic region. The motions were clay-like but contained some green biliary colouring matter and pellets of mucus like boiled sago. There was a large amount of bilirubin in the urine but no albumin. The pyrexia was of an irregular type; usually there was an evening rise to 101°–103° F. Sometimes there was a double rise—in the morning and afternoon—with a fall between. This irregular pyrexia lasted for 14 days. Then the patient was seized with abdominal pain, accompanied by a fall of temperature, signs of collapse, and a pulse of 120. Vomiting occurred twice and severe pain lasted for 12 hours. Over the abdomen there were diffuse tenderness and increased resistance. In the flanks was slight dulness. Peritonitis was diagnosed and on consultation with Mr. R. J. Godlee it was decided to open the abdomen with a view to drain the gall-bladder. Deeply bile-stained fluid and free lymph were found in the peritoneal cavity. There was also lymph on the coils of intestine. The gall-bladder was opened and contained no gall-stones but green bile. Death occurred a few hours after the operation. At the necropsy the liver was found to be enlarged, deeply congested, and adherent to the diaphragm on its upper surface. It showed several small cavities containing a deeply bile-stained thick fluid. On microscopic examination these were found to be mainly dilated bile-ducts. Two stages could be distinguished. In the first stage the wall of the bile-duct was greatly thickened and infiltrated with polymorphonuclear leucocytes which had caused separation of the epithelium. In the second stage the epithelium had disappeared and a cavity was left, the walls of which were composed of polymorphonuclear leucocytes and large fatty degenerated cells. The appearances were therefore those of infective cholangiectasis. There was some increase of connective tissue in Glisson's capsule. The walls of the gall-bladder were somewhat thickened and there was an oval erosion of the mucous membrane about a third of an inch in diameter. The common bile-duct was greatly dilated, being at least an inch in diameter. The hepatic ducts were also greatly dilated. The biliary papilla projected three-quarters of an inch into the duodenum and was occupied by a whitish hard mass. This microscopic examination showed to be a columnar epithelioma. The peritoneal fluid gave a pure culture of an organism with all the characters of the colon bacillus. From the contents of the gall-bladder removed at the operation and from the contents of the cavities in the liver a diplococcus was cultivated which appeared to be the pneumococcus. Bacteria, mainly rods, which were not identified, were found in the walls of the biliary canals. The case presents several noteworthy points. Infective

cholangitis following carcinoma of the bile-duct is not unknown but its occurrence at such an early stage is rare. In this case the obstruction of the common bile-duct led to infective cholangitis and cholangiectasis. The infective agent was probably the pneumococcus. Dr. Martin thinks that although the peritoneal fluid yielded a pure culture of the colon bacillus it was not the cause of the peritonitis but that the latter was probably due to infection from the dilated bile-ducts. Invasion of the colon bacillus would thus be secondary. The question of treatment is important. On seeing the case Dr. Martin diagnosed infective cholangitis and would at once have had the biliary system drained if the gall-bladder had been found enlarged. As this enlargement was not present it is evident that it cannot be relied on as the only indication for operation.

PRINCE RANJITSINGHJI'S GIFT TO A HOSPITAL.

THE Jam of Jamnagar, better known in England as Prince Ranjitsinghji, has given Rs. 1000 to the Jamsetjee Jeejeebhoy Hospital, Bombay. During his recent illness His Highness was attended by nurses from that institution, and in recognition of the skill and care bestowed upon him he asked the senior medical officer to accept this donation and to dispose of the amount as he thought proper. The senior medical officer has consequently allotted Rs. 600 to the hospital and Rs. 400 to the nurses' home. In his reply to an address presented by his subjects at a grand durbar, in which it was said that every moment of his illness had been watched by all classes with the deepest anxiety, the Jam expressed his thanks to a merciful Providence for sending to his aid such an able physician as Major L. F. Childe, I.M.S., and such excellent nurses as Miss Irving and Miss Berry. His speedy recovery, he added, was due to their continuous care and combined efforts. In accordance with Major Childe's advice, Prince Ranjitsinghji is now in England and intends to remain here at least a twelvemonth in order to recuperate from the effects of the severe attack of enteric fever by which he was prostrated soon after his installation as Jam Saheb of Jamnagar.

THE TREATMENT OF GONORRHŒAL RHEUMATISM WITH ANTI-GONOCOCCUS SERUM.

IN the *Journal of the Royal Army Medical Corps* for November Major F. J. W. Porter, R.A.M.C., has reported six consecutive cases of severe gonorrhœal rheumatism in which complete recovery followed treatment by anti-gonococcic serum and in four this ensued rapidly. The diagnosis in all the cases was confirmed by the microscope. The following are some examples. A driver was admitted into hospital on Feb. 21st, 1906, suffering from gonorrhœa. On the 24th a right metacarpo-phalangeal joint was much enlarged and painful and the lumbar articulations and both shoulder-joints were also affected. On March 8th the following were affected: right thumb, both shoulders, lower spinal articulations, left plantar fascia, and the left knee. 25 cubic centimetres of anti-gonococcus serum were injected into the flank. This caused a good deal of local reaction and a rise of temperature to 101·2° F. On the following day the temperature was normal. There was no pain in the knee, though on the previous day it was so painful that he could not bend it. The plantar fascia, the back, and the left shoulder were much better. A second injection of the same dose caused a rise of temperature to 102°. The dose was repeated on the 10th and 14th. The whole of the joints cleared up and he returned to duty on May 5th. In a second case a private was admitted suffering from gonorrhœa on April 27th, 1906. On May 4th the right thumb was swollen, red, and shiny, and looked as if it was going to suppurate. Subsequently both wrists, the back, both shoulders, both elbows, and several finger joints became affected. Six doses of anti-gonococcic serum were given—on May 8th, 9th, 10th, 11th, 19th, and 20th. The urethral discharge ceased on May 22nd and he returned to duty on the 25th. A private was admitted with gonorrhœa, conjunctivitis, and arthritis of the right hip and ankle. 25 centimetres of anti-gonococcus serum were injected on Sept. 6th, 7th, 8th, and 9th. A good deal of urticaria followed some of the injections. Rapid improvement ensued and he returned to duty on the 26th. A private was admitted on Nov. 1st, 1906, for synovitis of the knee which he said was due to having hurt the joint on Oct. 18th, though he had done duty until admission. The temperature was normal and there was a profuse urethral discharge. The joint was aspirated and gonococci were found in it. Four injections of 25 cubic centimetres of anti-gonococcus serum were given on Nov. 1st, 2nd, 3rd, and 4th. No other joints became affected but a relapse occurred on Dec. 25th, for which two more injections were given. The urethral discharge disappeared more rapidly than usual. Urticaria followed one of the injections. He returned to duty on Jan. 11th, 1907. As gonorrhœal rheumatism is liable to be followed by disabling stiffness of joints Major Porter's results are remarkable. He thinks that the injections should be given immediately after the onset of arthritis and in severe cases daily for five or six days. In cases of chronic changes in the joints he does not believe that the serum is of the slightest use. In most of the cases the urethral discharge diminished and in some disappeared long before it usually does. Urethral injections were given in all cases.

"PREMATURE BURIAL."

ABOUT a fortnight ago a London newspaper chronicled the fact that a woman on the Continent had been buried with a loaded revolver in her hand ready to end her existence should she subsequently in her coffin become cognisant of her surroundings. Directions of this kind which are frequently enjoined by testators upon their friends tend to keep the subject of "premature burial" before the public. Alarmists and sentimentalists would have us believe that burials alive are numerous. This is, of course, extravagant exaggeration; in this country, where burial seldom takes place before the third day after death, the possibility of the occurrence of such an event is extremely remote. At the present moment there is a movement to procure the passing of a Bill through Parliament dealing with the subject, the main object being to make "it obligatory upon the medical man last in attendance upon the dead to visit the corpse, or supposed corpse, signing a specially drawn up certificate ere the person can be interred." An Act of this character if passed would present many difficulties though the medical profession probably would not object to carrying out such an obligation if suitably remunerated. The promoters of the Bill suggest that the fee should vary with the social status of the deceased, but who is going to fix the corpse's position in the social scale and, far more important, who is going to be responsible for the fee? Again, why should it be necessary for "the medical man last in attendance upon the dead" to give the certificate? The only solution seems to be that the fee must be a fixed one for all persons and that it should be paid by the local authorities, a practice analogous to the present one for the notification of infectious diseases. To compel the already underpaid medical man to rely on a relative paying the fee and if unable to recover it to be branded as inhuman for demanding it would be manifestly unjust. Such a Bill as alluded to would be quite unnecessary if an alteration were to be made in the present method of death certification upon the lines advocated by the

deputation from the Medico-Legal Society and the London County Council, which recently received a sympathetic hearing from the Lord Chancellor. No medical man ought to give a certificate of death unless he has previously seen the dead body, and after such an inspection the most timid ought to feel assured that he or she will be properly defunct before consignment to the grave.

THE ANNUAL HEALTH REPORT OF STAFFORDSHIRE.

Dr. George Reid's report on the health of Staffordshire during the past year is particularly interesting as regards river pollution and infant mortality. Apparently in his opinion the Birmingham Tame and Rea district drainage board is by no means so much to blame for the pollution of the Tame as are the districts situated on the upper part of the river, and there seems reason to believe that not only is Birmingham attempting to do its duty but also that it is succeeding fairly well at present and there is promise of greater success in the future. Dr. Reid is not sanguine that infant mortality will be properly checked until children are taught the elementary principles of health; that is, he does not think that the present generation of adults is capable of appreciating and applying the knowledge that some authorities are endeavouring to put in their way, and to his mind the first step in the process is to educate the teachers.

THE HÆMOTOXIC ACTIONS OF CERTAIN SCLEROSTOMES.

AN interesting paper by M. Weinberg is published in the *Annales de l'Institut Pasteur* of Oct. 23rd, in which the results of some experiments carried out in M Metchnikoff's laboratory are recorded throwing light upon the pathogenic effects of certain sclerostomes parasitic in the horse. An extract was made from specimens of sclerostomum equinum by washing them well in weak saline solution and then pounding them up in a mortar with a quantity of normal saline solution equal to their weight. The fluid part was then removed by filtration or centrifugalisation and its properties were investigated. It was found to possess hæmolytic properties for the blood corpuscles of the horse which were completely and rapidly dissolved by it. This hæmotoxic substance appears to be secreted more especially by the cephalic part of the parasite but is formed also by its digestive tube. The substance is thermostabile; it is separated from the extract by means of a Chamberland filter but not by a Berkefeld. It can be extracted by means of ether but not of alcohol. This substance is not specific in its action, since it will dissolve the red corpuscles of other animals, such as the rabbit, guinea-pig, sheep, and ox. The extract, like leech extract, possesses also the power of preventing the coagulation of the blood. It further has the properties of a precipitin in regard to the serum of the horse; in this action, also, it is not specific, since it produces a like change in the serum of the rabbit. No substance with hæmotoxic properties could be obtained from other helminths occurring in the intestines of the horse, such as oxyuris equi, ascaris megalocephala, tænia perfoliata, and tænia plicata, from which it would appear that of the intestinal parasites of the horse the only one which forms a hæmotoxin is the one which feeds upon the blood of its host. The interest of these observations in regard to the action of the ankylostoma duodenale in man is pointed out by M. Weinberg who refers to the work of Loeb and Smith. These observers obtained an extract from ankylostoma caninum which hindered coagulation. In this connexion we may also refer to the observations of Alessandri who found that an extract of ankylostomes possesses toxic properties, and to those of Looss who believes that a hæmolytic toxin is formed by certain glands in the head of this parasite, the latter observer attributing many of the effects of the parasite to the toxic action of such substances rather than to abstraction of blood.

MERCURIC BROMIDE IN THE TREATMENT OF SYPHILIS.

A SHORT time ago Dr. Dalimier and Dr. J. de Nittis brought before the Société de Thérapeutique of Paris the value of mercuric bromide in the treatment of syphilis. The mode of using it is now dealt with in the *Journal de Pharmacie et de Chemie* by M. A. Vicario who states that the salt is only soluble in water to the extent of 1 in 250, yielding a solution that is decomposed on boiling with production of an oxybromide of mercury and hydrobromic acid. In order to prepare a solution for intramuscular injection it is necessary to use a halogen salt of an alkali metal. A satisfactory solution is prepared by dissolving 1·03 grammes of anhydrous sodium bromide and 1·8 grammes of mercuric bromide in sufficient cold water to produce 100 cubic centimetres. This solution is stable and may be heated to the boiling point or sterilised at 120° C. without undergoing decomposition. It does not coagulate albumin at 37° C. and contains the equivalent of 0·01 gramme of metallic mercury per cubic centimetre. It is neutral and does not cause pain when injected, whereas solutions of twice and five times the strength are painful to administer. Sodium bromide is preferable to sodium chloride which does not give a perfectly neutral solution and possesses the additional disadvantage of slightly precipitating albumin.

PLAGUE IN SYDNEY IN 1906.

THE persistency with which plague holds on to Sydney is once more brought to notice by the recently issued report of Dr. J. Ashburton Thompson on a sixth outbreak of plague at Sydney in 1906. Fortunately these outbreaks are very limited in their nature, the one in question only numbering some 20 cases altogether. The interval between this outbreak and the previous one extended over a considerable period, for no case of human plague occurred between July 12th, 1905, and March 9th, 1906. This freedom from human plague did not correspond with absence of rat plague, for the interval between the discovery of plague-infected rats appears only to have extended between Dec. 5th, 1905, and Jan. 23rd, 1906. This could hardly be called a plague-free period; it only means that during some seven weeks no plague-infected rats were discovered. Of the 20 cases of human plague eight proved fatal, which gives a mortality of 40 per cent. Dr. Ashburton Thompson gives a detailed account of the 20 cases and from this it is to be gathered that there were 16 bubonic cases, one septicæmic case, and three primary pneumonic cases. The septicæmic and primary pneumonic cases were all fatal, while four, or 25 per cent., of the bubonic cases died. Many of the bubonic cases were of a mild character and in all there was a relationship between them and dead rats. Most of the cases showed flea bites on the limb corresponding to where the bubo appeared. It would be instructive to compare the frequency with which similar flea-bite marks are found in corresponding positions in those not attacked with plague. One of the most interesting features of this outbreak is the occurrence of primary pneumonic plague, this form of the disease not having previously been encountered in New South Wales. It is strange that so long a time should have elapsed before the appearance of primary pneumonic plague in Sydney, and the fact is one which from an epidemiological point of view deserves attention. Similarly, with regard to its mode of origin it would have been of the utmost value to have

determined how this first case arose. It is unfortunate that the circumstances connected with the case rendered it impossible to obtain the necessary information which might have thrown light on this question, the patient being attacked at sea a few days after leaving Sydney and on his being landed the ship immediately sailed and did not return until a fortnight after when inquiries were instituted. There seems to have been a history of the deceased having thrown a dead rat overboard.

THE SOCIETY OF APOTHECARIES.

ON Nov. 19th the Master (Mr. George Wilks, M.B. Cantab., M.R.C.S. Eng.) and the Wardens (Mr. F. Gordon Brown, M.R.C.S. Eng., L.S.A., and Mr. R. Bligh Wall, M.R.C.S. Eng., L.S.A.) of the Society of Apothecaries offered the hospitality of the Society to a numerous and representative company in their hall. The occasion was what is known as the Lord Mayor's-Day Dinner and the Lord Mayor (Sir John Bell) and the two Sheriffs (Mr. Alderman Burnett and Mr. Wakefield) attended. Dinner was announced with commendable punctuality at 7 o'clock P.M., and among those present were: Lord Hothfield; Sir James Reid, Bart., K.C.V.O.; Sir R. Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London; Sir Frederick Banbury, Bart., senior M.P. for the City of London; Mr. Henry Morris, President of the Royal College of Surgeons of England; Surgeon-General Sir William Deane Wilson, K.C.M.G.; Dr. F. H. Champneys; Dr. B. B. Connolly, C.B.; Dr. Norman Moore, Mr. S. Osborn, and many others. After the loyal toasts, the toast of "The Houses of Parliament" was proposed by the Senior Warden and responded to by Lord Hothfield and Sir F. Banbury; that of "The Lord Mayor, the Sheriffs, and Corporation of the City of London," proposed by the Master and responded to by the Lord Mayor; that of "The Royal Colleges of Physicians and Surgeons," proposed by the Junior Warden and responded to by Sir R. Douglas Powell and Mr. Henry Morris; that of "The Society of Apothecaries of London," proposed by Mr. H. T. Butlin, and responded to by the Master; and finally, that of "The Visitors," proposed by Alderman Sir Thomas B. Crosby, M.D., and responded to by Sir James Reid. The dinner was admirable in every way, and delightful music was provided by the Misses Hilda and Phyllis Lett, Mr. Walter Hyde, and Mr. Frederick Ranalow, who were ably accompanied by Miss Ethel Robinson. The grace after dinner was sung to a four-part setting of the beautiful old melody, "Alla Trinita Beata," but it was a pity that the version selected had been arranged with harmonies of such a modern type as to destroy the character of the melody. The dinner was held in the dignified old hall of the Society, and the guests certainly experienced a most enjoyable evening. The speeches dealt with matter of a highly contentious nature.

THE TREATMENT OF DETACHMENT OF THE RETINA.

THE treatment of detachment of the retina has hitherto been so disappointing that any method or even modification of a previous method which has been found to lead to improvement should receive careful attention from ophthalmic surgeons. Treatment by prolonged and absolutely continuous dorsal decubitus has occasionally led to replacement of the retina, but relatively few patients can be found to submit to the wearisome and even painful process which is useless unless carried out thoroughly, generally fails even with the greatest perseverance, and in the few successful cases is seldom more than temporary. This method has been supplemented by hypodermic injections of pilocarpine, subconjunctival injections of various saline solutions, scleral puncture, and so on. Last year Dr. A. Maitland Ramsay published a series of cases in which subconjunctival injections were used. In no case was any considerable permanent improvement reported, though some of the cases benefited to a slight extent. Scleral puncture at the site of the detachment, either by a Graefe cataract knife or by the galvano-cautery, is attended with similar results. In our experience it is advisable always to puncture the separated retina, posterior sclerotomy alone being useless. Deutschmann, at a recent meeting of the Heidelberg Ophthalmological Society, showed cases of re-attachment after passing a knife completely through the sclerotic, a fold of the detached retina, and out by the sclerotic on the other side. This method is not always applicable and has not received the confirmation at the hands of others which the brilliant examples shown might lead us to expect. Our Vienna correspondent in THE LANCET of Nov. 16th, p. 1429, draws attention to the procedure which has been adopted by Dr. Sachs with encouraging results. It differs from ordinary posterior sclerotomy only in the site of puncture which is made behind the equator of the eyeball. Theoretical considerations and past experience scarcely justify our hailing this method as the solution of the problem. Slight transitory improvement is the usual sequel of other modes of treatment and Dr. Sachs does not appear to have had much greater success. It will be of interest to hear the ultimate results of his procedure when a long enough interval has elapsed to warrant us in regarding them as permanent.

THE Department of Public Health of Queensland, in a bulletin dated Oct. 12th, states that no case of plague has occurred in Brisbane since July 26th. As regards Cairns, a post-mortem examination made on a patient who died on Oct. 8th at the General Hospital revealed the presence of bacillus pestis in the viscera. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Nov. 15th states that for the week ending Nov. 14th there were 9 cases of plague and 9 deaths from the disease.

Sir Alfred H. Keogh, the Director-General of the Army Medical Service, will hold conferences on the Territorial Forces scheme, considered from the medical point of view, at Exeter on Wednesday, Dec. 4th, and at Plymouth on the following day, to meet the profession of Devonshire and the neighbouring counties.

THE inaugural dinner of the Royal Society of Medicine will be held, as already announced, at the Hotel Cecil on Tuesday, Dec. 3rd, at 7 for 7.30 P.M. We are informed that very few seats are left and Fellows and members who desire to be present should make immediate application.

THE annual dinner of the Harveian Society will be held at the Imperial Restaurant, Regent-street, on Thursday, Nov. 28th, at 7.30 P.M. The President, Dr. Sidney P. Phillips, will take the chair.

WE regret to announce the death of Sir Charles F. Hutchinson, M.D., who was Liberal Member of Parliament for the Rye division of Sussex during the last Balfour administration.

His Majesty the King has sent to the treasurers of the Middlesex Hospital his annual subscription of £100.

THE FEEBLE-MINDED.—If the speeches made at a recent conference in Birmingham of the representatives of committees interested in the care of the feeble-minded are to be taken as an indication of the general trend of thought, it would seem that the desire to apply legal restraint to prevent feeble-minded individuals from propagating their species is rapidly increasing. No longer are veiled terms used when the subject is discussed but it is dealt with openly and emphatically.

THE VENTILATION AND DRAINAGE OF THE *MAURETANIA*.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

Liverpool, Nov. 18th.

THE advent of two such ships as the *Lusitania* and the *Mauretania* is an event of vast importance not only from the maritime and commercial point of view but as also having its influence on the problem of sanitation at sea. The construction of such huge ships has so emphasised and accentuated long-standing difficulties as to render their solution absolutely indispensable. Of course, the primary difficulty has been that of ventilation. The horror of the stuffy cabin with its odour of sea-sickness, engine-oil, and mahogany polish used to constitute the chief and most repugnant impression produced by a sea voyage. Then, as larger ships came into existence, with space for a promenade deck with its deck cabins, passengers eagerly paid extra sums so as to have a porthole which they could open and thus obtain a little fresh air. Obviously ships needed careful ventilation as well as theatres, hospitals, and all other structures where a large number of people congregate. Invention followed invention, patent cowls and patent windows, and one and all rendered but partial service. The changes of temperature and of wind are so constant that it is now generally recognised that mechanical force alone can render ventilation independent of the fluctuations in the weather. But if this is so on land, how much more does the rule apply to a ship at sea where there is the further complication of the great rush of air created by the rapidity with which the ship cuts her way through the water. To put cowls on the deck of a ship and to trust that enough wind will be blown down into the cabins is merely to play with the problem and to court certain failure. The idea used to be that if the mouth of the cowl faced the prow then as the ship moved forward the wind would blow down and therefore when the ship went slowly there was less air below and when it stopped there was no air at all. All methods depending on the opening and shutting of some aperture mean too much air and draughts or not enough air; in fact, it is quite a matter of hazard when the supply is just what it should be. Such a fortunate combination of circumstances rarely occurs and never lasts long. Yet the public is so accustomed to rely on such defective methods that actually in these new ships openings are made in the cabins that are not in the least required but simply because the passengers would not be happy if they could not open something. They would imagine that there was no ventilation. They are so accustomed to open a door or a window at home that when they reach a cabin their propensity to open something must be satisfied. The problem, therefore, was how to give something that could be opened or shut according to the passenger's fancy without altogether destroying the system of ventilation. The triumph of the ventilation system now adopted is that the passenger may open what he likes and yet he will not let any air into the ship. Even if he opens a port window looking right over the sea the chances are that he would only let air out and not any air in. Many cabins have a little louvre aperture going into the passage, which may be opened if this can afford any pleasure to the passenger. It simply facilitates the exit of the air from his cabin but does not in any way increase the amount supplied to the cabin.

It would also be a mistake to imagine that the huge and numerous cowls on the uppermost deck, known as the navigation deck, have anything to do with the ventilation of the cabins and saloons. Their purpose is to feed the furnace where an enormous volume of air is required considering the thousands of tons of coal that have to be consumed in a few days. At the inlet from these cowls in the stoke room are placed baffle plates. These prevent the air going directly to the furnace but make it pass on a level with the stokers and firemen. Thus these men obtain an extraordinary amount of cool and pure air while engaged at their arduous task. But further and above the boilers there is a powerful fan which propels the air with great force into the fire and this creates a sort of blast furnace. The cowls are therefore of use to the furnace and the firemen and not to the passengers.

The first, second, and third class passenger cabins and saloons and all the quarters for the crew are supplied with compressed air, that is, the air in every habitable portion of the ship is under greater pressure than the outside atmosphere, except in the lavatories. Thus if a cabin door is opened the air rushes out of the cabin and not into the cabin. All the passages, staircases, and doors giving on to the deck are outlets. Only in the case of the lavatories is the process reversed. If a lavatory door is opened the air rushes into the lavatory and not out of the lavatory. The reason and advantage of this are obvious. To insure this end what is called the thermo-tank system of ventilation is employed. No less than 65 of these machines are placed in different parts of the highest decks. They consist of a strong metallic case containing in one part an electric fan of such power that it can pump down into the ship 4000 cubic feet of air per minute. This means a grand total of 260,000 cubic feet of fresh sea air from the upper deck per minute. With that supply the entire atmosphere within the habitable part of the ship can be changed every four minutes. This, of course, is more than necessary, though it will be very agreeable in the hot weather. In the cold weather there are within each of these apparatus a number of coils that can be filled with steam, and thus the air is warmed before it is pumped into the ship. Of course, and this is the main advantage, the ventilation in no wise depends on the weather or the wind. It depends wholly and solely on the rapidity in the revolutions of the mechanical fans. The ship is divided into 65 sections and the air is pumped into each section by its own thermo-tank. But if an accident should happen to one of these apparatus then there are means provided by which each set of ventilating shafts can be connected with a neighbouring set. Thus, it would then only be necessary to make the fan revolve more quickly, so that one apparatus should feed two of the 65 ventilation sections into which the ship is divided. To attend to these 65 ventilating machines two engineers have been engaged and their time is wholly devoted to the one question of ventilation. The shafts that communicate with the lavatories do not serve as inlets but, on the contrary, as outlets; the current is, therefore, to the lavatory and out by the shafts and these abut into the outer funnel. Thus, the air from the lavatories is discharged into the open at the top of the funnels with the smoke.

Apart, however, from this carefully devised method of ventilation the lavatories are so well organised that they could not occasion any nuisance. Instead of a two gallon flush tank to each closet and a chain to pull there is direct communication with the large sea-water tank on the upper deck. But to give a greater pressure a pipe has been placed by the side of one of the funnels going to a height of 35 feet above the tank. Thus to the closet on the lowest deck there is a head of water of 85 feet. Even the closets that are on the highest decks have a head of water of 55 feet, consequently in all cases the flush comes with great power. Then the chain which in bad weather is liable to swing about and make a noise is abolished. In its place there is a press-balance valve which, on being pushed down, causes an instantaneous discharge of three and a half gallons of water into the pan. By continuing the pressure more water can be obtained. With so powerful a flush the soil pipes are not likely to be dirty. Nevertheless, the soil pipe is ventilated by being continued some distance above the decks. In the third-class, where there are often emigrants who have never seen a water-closet in their lives and have no conception as to how they should be used, everything must work automatically; consequently the valve is pressed each time the door is opened or shut and thus the pan is flushed as the passenger enters and again as he leaves the closet. Near at hand are the washing-stands and a bath for the third-class passengers and the whole compartment is on tiles and can be washed out with the fire-hose.

When I visited the *Mauretania* as she lay at anchor in the Mersey it was difficult to realise all these things. I could only wonder at the gigantic proportions of the ship and admire the artistic beauty of its decorations and furniture. Occasionally I was amused by discovering that there were beautiful pieces of trellis work and wood carving that the passengers would justly contemplate as works of art but which also served to mask an air inlet forming part of the general scheme of ventilation. In the sleeping cabins the air inlet consists of a grate some 20 inches long and eight inches wide. A little chain can be pulled to open or

to close this grate-like aperture and this constitutes the weak part of the system. If many passengers close their inlets then the air will go with exaggerated force and velocity through those few ventilating inlets that remain open. Indeed, at times this will even occasion a humming noise. There is here room for still further improvement. It is doubtful whether passengers should be able to close the ventilators. Indeed, the ideal would be that the air should enter so slowly that it would not be felt and hence no one would want to prevent its entrance. However, I can only and in a general sense make these indications; to really know how the system works it would be necessary to live on board for some time. The one thing to be thankful for is that a system has been devised, that the necessity of mechanical appliance has been recognised, and that the supply of air is no longer left to the chapter of accidents. The passenger has as much air at his disposal as he wants; if he tampers with the system he has only himself to blame for the result.

MEDICAL MEN AND MUNICIPAL HONOURS.

THE following is a list of members of the medical profession who have been elected or re-elected to the mayoral chair, together with brief notes of their medical and municipal careers so far as we have been able to ascertain them. In one case a medical man has been elected Lord Mayor—namely at

Liverpool which has chosen for its chief magistrate, Mr. Richard Caton, M.D., C.M. Edin., F.R.C.P. Lond. Dr. Caton received his medical education in Edinburgh, graduating as M.B., C.M. of the University in that city in 1867 and receiving the M.D. degree in 1870. In 1888 he became a Fellow of the Royal College of Physicians of London, having been a Member of the College since 1878. Dr. Caton, who has laboured in the spread and the enforcement of public hygiene and in the systematic and effective improvement of the housing of the working-classes, is descended from a Yorkshire family and has been a resident in Liverpool for nearly 40 years. His first medical appointment in Liverpool was that of assistant physician to the Children's Infirmary. He then became physician to the Northern Hospital (now the David Lewis Hospital). In 1886 he succeeded Dr. A. T. H. Waters as physician to the Royal Infirmary, retiring in 1902 on the age limit. He is emeritus professor of physiology at the University of Liverpool and also a member of the Council of the University, in addition to which he is a member of the General Medical Council as the representative of the University of Liverpool. He entered the city council in June, 1903. As chairman of the housing committee and deputy-chairman of the secondary education sub-committee he has found congenial spheres of labour and has done valuable work. In the year in which he entered the city council he was appointed a magistrate for the city of Liverpool. He also has held the offices of honorary general secretary and president of the Liverpool Medical Institution.

Aldeburgh.—Mr. Charles Dudley Somers, M.B., B.C. Cantab., L.R.C.P. Lond., M.R.C.S. Eng., the Mayor of Aldeburgh, was born in 1869 at Hampstead and was educated at Malvern and at Pembroke College, Cambridge. He studied at St. Thomas's Hospital and obtained the qualifications of L.R.C.P. Lond., M.R.C.S. Eng., in 1897. Two years later he graduated M.B., B.C. Cantab. In 1897 he began practice at Surbiton and in 1903 retired and went to Aldeburgh where he took an active interest in municipal affairs. For two years he has been a member of the East Suffolk county council and in November of the present year stood for the borough council when he headed the poll and was asked by his fellow councillors to be mayor of the borough. Dr. Somers is a keen sportsman, taking a prominent part in the local golf club, cricket club, tennis club, and rifle club, the origin of the last two being due to his energies.

Arundel.—Mr. George Wallace Eustace, M.D., B.Ch. Dub., B.A.O., the Mayor of Arundel, was born in 1870 at Belfield, co. Dublin. He was educated at Trinity College, Dublin, and graduated M.D. in 1898. In March, 1903, he was elected a Fellow of the Linnean Society of London. In 1900 he served in the South African War and for his services received a medal and three clasps. His connexion with municipal affairs commenced in February of last year when, on a vacancy occurring, he was elected on the council and has since been assiduous in working for the good of the public health of the town.

Bootle.—Mr. James Pearson, L.R.C.P. Lond., M.R.C.S. Eng., the Mayor of Bootle, received his medical education at University College, London, and obtained the qualification of the Conjoint Board in 1888. He is honorary surgeon to the Bootle borough hospital and has had considerable experience of municipal work.

Brecon.—Mr. George Philip Francis, L.R.C.S. Edin., L.A.H. Dub., J.P., the Mayor of Brecon, was born in 1855, being the only son of the late Mr. C. Francis, J.P., of Vennyfach, Brecon. He received his medical education at St. Thomas's Hospital, taking the qualifications of L.R.C.S. Edin. and L.A.H. Dub. in 1879. Mr. Francis commenced practice at Bourton, Dorset, and continued there until 1887 when he succeeded to the practice of Mr. Talfourd Jones at Brecon. Mr. Francis is surgeon to the Brecon Infirmary and medical officer of health of the Merthyr Cynog district of the Brecon rural district council; he is also medical officer to H.M. Prison and to the post office at Brecon. Mr. Francis was elected to the town council unopposed three years ago and on Nov. 1st last he was returned at the head of the poll. He is a prominent Freemason, a keen sportsman, and a successful breeder and judge of hackney horses.

Bury St. Edmunds.—Lieutenant-Colonel Robert Anderson, R.A.M.C. (retired), F.R.C.S. Eng., L.R.C.P. Lond., the Mayor of Bury St. Edmunds, received his medical education in London and at Edinburgh. He entered the army as assistant surgeon in 1868, became surgeon in 1873, surgeon-major in 1880 and surgeon-lieutenant-colonel in 1888. He retired in 1893. He served in the Egyptian war of 1882, being during part of the time in medical charge of the right wing of the Ismailia Palace Hospital; for his services he received the medal and Khedive's star.

Conway.—Mr. R. A. Prichard, M.R.C.S. Eng., L.R.C.P. Edin., J.P. for the county of Carnarvon, who was Mayor of Conway from 1893 to 1897, was again chosen to represent his fellow townsmen in the civic chair in 1905. Last year he was once more elected and has been re-elected this year. He has been President of the North Wales branch of the British Medical Association and is a surgeon-colonel (V.D.) of the 3rd V.B. Royal Welsh Fusiliers.

Montgomery.—Mr. Nicholas Watson Fairles-Humphreys, M.R.C.S. Eng., L.S.A., has again been elected Mayor of Montgomery. He was born in 1837 and was educated at St. Bartholomew's Hospital. In 1885 he was elected Alderman for the borough of Montgomery and has been eight times mayor of that borough. He was high sheriff in 1882–83 and has been a county alderman since 1889.

Neath.—Mr. John Walter Thomas, L.R.C.P. Lond., M.R.C.S. Eng., who has been elected Mayor of Neath, is 50 years of age and was born at Ystalyfera. He received his medical education at St. Thomas's Hospital and qualified in 1881. Mr. Thomas commenced practice in Neath in 1883. Some 15 years ago he entered the town council but retired on being appointed medical officer of health, which appointment he subsequently resigned. Three years ago Mr. Thomas was elected at the head of the poll and at the recent election he was returned unopposed. Mr. Thomas is a member of the board of guardians and was formerly on the old school board.

New Romney.—Alderman Richard R. Daglish, M.R.C.S. Eng., L.S.A., J.P., of New Romney, Kent, has been re-elected Mayor of that old and historical Cinque port for the ninth time since September, 1885, when the ancient borough was granted a new charter in accordance with the Municipal Corporation Acts, although under the old charter granted by Queen Elizabeth in the fifth year of her reign the corporate body consisted of a mayor, jurats, and commonalty. Mr. Daglish qualified in the year 1864 and was educated at Liverpool and at Guy's Hospital, London. He is an Admiralty surgeon and agent, a district medical officer, the workhouse medical officer, and surgeon to the county constabulary. New Romney has been constant to some of its previous mayors but Mr. Daglish has established a record for the borough.

Oldham.—Mr. Robert Gourlay, M.B., C.M. Glasg., who has been re-elected the mayor of Oldham, was born at Kirkintillock, near Glasgow, and received his medical education at the University of Glasgow, where, before graduating M.B., C.M. in 1883, he won the Johannes Hunter medal in the senior division. He went to Oldham in 1884 and commenced practice there. He was first returned to the council

in 1889 for St. James's Ward after a contested election; in 1892 he was successful again; in 1895 he was returned unopposed; and in January, 1897, he was made an alderman. He retired from the council in 1901 and was re-elected for Waterhead Ward in 1904. During his membership of the council Dr. Gourlay has rendered to his adopted town valuable service, especially on the watch, health, gas, electricity, park, and education committees. He has been honorary president of the Oldham Caledonian Society since its formation.

Rotherham.—Mr. George Henry Lodge, L.R.C.P., L.R.C.S. Edin., L.D.S. R.C S.I., is a native of the borough which has honoured him by electing him to the office of Mayor. He received his early education at the Rotherham Wesleyan Day School, at a private school at Kimberworth, and at Wesley College, Sheffield. His professional studies were pursued at the National Dental Hospital and at Charing Cross Hospital, London, and also at the Sheffield School of Medicine, the Royal Infirmary, Sheffield, and at the Surgeons' Hall and Royal Infirmary, Edinburgh. He commenced practice as a dentist in Rotherham in 1882. He is the author of several contributions to the proceedings of various medical and dental societies and in 1900 was elected delegate by the British Dental Association to the World's Dental Congress at Paris. Mr. Lodge in 1897 sought without success a seat on the Rotherham school board. Subsequently he was coöpted on that board and held office until 1902, when the administration of elementary education was taken over by the borough council under the provisions of the Education Act of that year. In 1904 he was elected to the borough council for two years and was then again returned unopposed. Mr. Lodge has taken a special interest in all that concerns the health of his borough and has served on practically every committee which has dealt with subjects bearing on the welfare of children in schools and public health. He is chairman of the committee appointed under the Midwives Act.

Welshpool.—Mr. Richard David Thomas, L.R C.P., L.R.C.S. Edin., L.F.P.S. Glasg., the Mayor of Welshpool, is a native of Cemmes Bay, Anglesea, and has been resident in Welshpool for more than 18 years. He is a county district coroner, Poor-law medical officer and public vaccinator for Forden and Llanfyllin unions, and medical officer of health of the Forden district. He first entered the town council in 1898 and has since been returned twice.

Wimbledon.—Mr. Samuel Ruddell Collier, M.D., M.Ch., M.A.O. R.U.I., the Mayor of Wimbledon, is a native of Ireland and was born at Belfast He was educated at Queen's College in that city and graduated at the Royal University of Ireland, obtaining the degree of Doctor of Medicine in 1886. In the same year he also obtained the degrees of M.Ch., M.A.O. with honours. In the following year he settled in Wimbledon. He has always taken great interest in local matters affecting the welfare of the community in general. On the incorporation of the borough two years ago he was elected as one of the representatives for St. John's Ward and during the first year he was chairman of several committees. He is a member of the free public library committee and has held a seat on the education committee since the institution of the present scheme under which the educational affairs of the borough are controlled. He took an active interest in the formation of the Wimbledon Medical Society, of which he is president. Dr. Collier was an enthusiastic Rugby football player and played for Ireland in an international match against Scotland. He now is a keen golfer and a short time ago established a record with a long drive on the course of the Royal Wimbledon Golf Club.

MEDICINE AND THE LAW.

Medical Evidence in India.

IN a note in THE LANCET of Sept. 28th, p. 917, a case was described in which a medical man, on the staff of the Kolar Goldfields Hospital, had been fined in India for contempt of court, in consequence of his having refused to give what he deemed to be expert evidence without receiving a fee as an expert witness. His appeal has now been heard and dismissed, the fine of 50 rupees inflicted being, however, reduced to 5 rupees, on the ground that his "contempt" was technical and was committed in order to obtain an authoritative decision upon the point raised. The appeal was heard by two native judges in the chief court of Mysore, Mr. Justice Nanjandiah and Mr. Justice Chandrashekra Iyer, who after hearing the argument of counsel on behalf of the appellant and having held that the court which fined the appellant had jurisdiction to do so stated the question at issue as follows: "It was contended that the offence could not fall under Section 179 of the Indian Penal Code, as the appellant was asked to give his opinion and not to speak to any external fact that had come to his knowledge and that the penalty prescribed therein can be applied only to persons who are legally bound to speak the truth." As to this the judgment continues: "The appellant had been sworn as a witness and was bound under the Oaths Act to speak the truth on the subject on which he was asked; he was bound to give his true opinion." After examining the provisions of the Evidence Act they further held that the witness could be compelled by a court to answer relevant questions in all cases, and that even if there were a rule allowing fees it would not be open to a witness to decline to give evidence unless there were also a legal provision that a witness was not bound to give evidence if his fees were not paid, because after taking the oath a witness is subject to the rules of the court and must give evidence irrespectively of his claim to receive a fee. We gather from this that the position of the medical witness in India is an unsatisfactory one. In this country medical men giving professional evidence in criminal cases are remunerated upon a scale which differs from that adopted in the case of those who merely depose to facts which have come within their cognisance and also any witnesses called purely as experts receive such payment as is held by the court to be reasonable. The medical man called as such and not coming under the heading of an expert witness frequently has to express opinions. For instance, he may be asked how by the light of what he has observed he thinks a death occurred or an injury was inflicted. We gather, however, from the judgment quoted above that any witness in India asked for his opinion is bound to give it without distinction and that the conclusion which a medical man has based upon long training for, and practice in, a scientific profession is upon the same footing with regard to remuneration as, for example, that of a bricklayer asked whether in his judgment a prisoner was sober or not when he did a certain act. There is nothing in the report of the case before us in the *Times of India* to suggest that the appellant sought to distinguish between the evidence of an expert and ordinary medical evidence rewarded as such, or that any such point was considered by the court to which he appealed.

Power of Local Authorities to Provide Hospitals.

Section 131 of the Public Health Act, 1875, gives power to any local authority to provide for the use of the inhabitants of the district hospitals or temporary places for the reception of the sick, and for that purpose the authorities may (1) themselves build such hospitals or places of reception; or (2) contract for the use of any such hospital or part of a hospital; or (3) enter into an agreement with any person having the management of any hospital for the reception of the sick inhabitants of their district on payment of such annual or other sum as may be agreed on. Two or more local authorities may combine in providing a common hospital. They may purchase a site within or without their district by agreement (or under a provisional order by compulsion), or take on lease the site and erect the necessary buildings. Under 1 Edw. VII. c. 3, s. 2, county councils may contribute to the expenses of any hospital provided by a district council within or without the county, but the payment of annual contributions is subject to the sanction of the Local Government Board unless the hospital was provided by means of borrowed money. The guardians of the Poor-law union having a hospital vested in them have powers under the 42 & 43 Vict. c. 54, s. 14, to transfer such hospital to the council of a rural district forming or comprised within the union by resolution confirmed by an Order of the Local Government Board; the Order providing for the contributions to be paid by the council of an urban district in the union if the hospital is to be for the use of inhabitants of such district, or for the payment to the urban part of the union of the value of its interest in the hospital if the inhabitants of that part are not to have the use of it. With regard to the use of corrugated iron buildings

as hospitals, the Local Government Board, in its memorandum dated December, 1876, "on hospital accommodation to be given by local authorities," states that not only have such buildings been in its experience unsatisfactory because it has been found impossible to keep the wards at a sufficiently equable temperature throughout the year even when the buildings are lined with wood, but they fail to meet the permanent needs of a district. And it refuses to sanction loans for such buildings for hospital purposes except in extensions of existing permanent accommodation on approved sites and then it is its practice to allow only a short period for repayment. In its memorandum of May, 1902, the Board requires that hospitals for small-pox shall not receive patients suffering from any other disease. A district council may, with the sanction of the Local Government Board, provide, or contract with any person to provide, a temporary supply of medicine and medical assistance for the poorer inhabitants of its district, and where the Infectious Disease (Prevention) Act, 1890, has been adopted by the district council, it may provide free temporary shelter or accommodation for the members of a family in which infectious disease has appeared, while the council disinfects their dwellings. The expenses which a district council incurs in maintaining in a hospital, or other place for the reception of the sick, a patient who is not a pauper are to be treated as a debt due from the patient and may be recovered from him at any time within six months after his discharge from the hospital or other place, or from his estate in the event of his dying there. By s. 123 of the Public Health Act, 1875, a local authority may provide and maintain a carriage or carriages suitable for the conveyance of persons suffering from any infectious disorder and may pay the expense of conveying therein any person so suffering to a hospital or other place of destination. Where any suitable hospital or place for the reception of the sick is provided within the district of a local authority, or within a convenient distance of such district, any person who is suffering from any dangerous infectious disorder, and is without proper lodging and accommodation, or lodged in a room occupied by more than one family, or is on board a ship or other vessel (including a canal boat), may, on a medical certificate and with the consent of the superintending body of such hospital or place, be removed by order of any justice to such hospital at the cost of the local authority, and any person so suffering who is lodged in any common lodging house may, with the like consent, be removed. A person who wilfully disobeys or obstructs the execution of such order is liable to a penalty of £10. Where the Infectious Diseases (Prevention) Act, 1890, has been adopted a justice may make an order for the detention in the hospital at the cost of the council of a patient suffering from infectious disease, who would not on leaving the hospital be provided with lodging and accommodation in which proper precautions could be taken against the spread of infection. Under the same Act, if the medical officer of health of the district or any other registered medical practitioner certifies that in order to prevent the spread of infection the body of a person who has died from infectious disease in the hospital or place for the reception of the sick ought not to be removed thence except for burial, such body, when removed, must either be taken to a mortuary or buried at once. The Public Health Act, 1875, s. 131, makes no distinction between pauper and non-pauper cases, and therefore provision must be made for the isolation of persons of all classes infected. The Local Government Board has stated that where a person suffering from illness, including infectious disease, is destitute, it is the duty of the guardians, or, in the interval between their meetings, of the relieving officer, to give out-relief as the case may require, and if necessary to give an order for the admission of the patient to a hospital in which he can be properly treated. Where, however, the removal of the patient is only required for purposes of isolation, and the person to be removed is not destitute, the guardians have no duty in the case, and the necessary provision should be made by the district council. The test of the guardians' duty in the matter is the destitution of the patient, and this will not necessarily depend upon his being in the actual receipt of poor relief but may consist in his being unable to obtain at his own cost the requisite medical attendance, nursing, and accommodation. Where it devolves upon the guardians to deal with cases of infectious disease which require hospital accommodation they are not restricted to providing for the treatment of such cases in the workhouse. On the contrary, the Board thinks it very desirable that when the district council possesses a suitable isolation hospital the guardians should arrange with it for the reception into such hospital when necessary of any destitute persons, including vagrants, suffering from infectious diseases.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

The Earl of Rosebery attended at the Royal College of Surgeons on Nov. 13th as a trustee of the Hunterian collection and presided at the meeting of the board. Sir Richard Douglas Powell, Bart., President of the Royal College of Physicians of London, Mr. Henry Morris, President of the Royal College of Surgeons, Dr. J. Mitchell Bruce, Dr. David Ferrier, and Professor G. Sims Woodhead were present at the meeting. The board adopted the following motion:—

That the trustees express their great regret at the death of Professor Charles Stewart and their appreciation of his services as conservator of the museum.

It was resolved to send a copy of the resolution to Mrs. Stewart. Sir John Tweedy was elected a trustee of the collection in the place of Sir Joseph Fayrer, Bart., deceased. The meetings of the trustees are now held on the second Wednesday in February, May, July, and November instead of on Friday as heretofore.

An ordinary meeting of the Council was held on Nov. 14th, Mr. HENRY MORRIS, the President, being in the chair.

It was resolved to grant diplomas of Membership to 87 successful candidates.

A report was received from the museum committee in reference to the steps to be taken for the appointment of a conservator of the museum. It was resolved to refer to the museum committee the revision of the standing rules to bring them into accordance with the committee's suggestions. The report will be considered by the Council in December and the post will then be advertised.

A report was received from the committee of management relating to the question of the extension of the interval between the Second and Final examinations. The committee of management considered that it would be desirable to postpone any action until some further reports, promised by the General Medical Council, are in its hands. The report was received and adopted.

A letter was read from the Deans of the Medical Faculties of the Universities of Leeds, Liverpool, and Sheffield suggesting the desirability of altering the times of year at which the primary examinations for the Fellowship are held from the present dates to the end of April and to the end of September. The matter was referred to a committee to consider and report.

The PRESIDENT submitted a *précis* of the evidence which he proposes to give before the Home Office Committee on the London Ambulance Service. The Council expressed its approval.

The PRESIDENT reported that the Bradshaw lecture will be delivered by Mr. Rickman J. Godlee on Friday, Dec. 5th, at 5 o'clock P.M., and that the subject of the lecture will be the Prognosis and Treatment of Tubercular Disease of the Genito-urinary Organs.

The PRESIDENT stated that the vacancy on the Court of Examiners occasioned by the expiration on Dec. 11th of Mr. C. T. Dent's term of office will be filled up at the next meeting of the Council on Dec. 12th.

The CHAIRMAN of the Library Committee reported that with the approval of the President he had authorised the librarian to present 130 duplicate volumes to the Boston (Massachusetts) Medical Library.

The SECRETARY announced the notices of motion for the annual meeting of Fellows and Members on Nov. 21st.

Mr. R. J. GODLEE moved: "That it be referred to the general purposes committee to consider the possibility of making arrangements for the provision of tea in the common room for readers in the library." The motion was carried.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8177 births and 4539 deaths were registered during the week ending Nov. 16th. The annual rate of mortality in these towns, which had been equal to 14·6, 15·7, and 14·6 per 1000 in the three preceding

weeks, rose again to 14·8 per 1000 in the week under notice. During the first seven weeks of the current quarter the death-rate in these towns has averaged 15·1, the rate in London during the same period being 14·2 per 1000. The lowest death-rates in the 76 towns last week were 7·7 in Northampton, 7·8 in Walthamstow, 8·5 in Tottenham and in Leyton, 9·1 in Willesden, and 9·2 in East Ham; the highest rates were 21·9 in Tynemouth, 22·0 in Rhondda, 22·1 in Oldham, 22·2 in York, 24·1 in Hanley and in Wigan, and 27 6 in Stockton-on-Tees. The 4539 deaths in these towns were 40 in excess of the number in the previous week, and included 388 which were referred to the principal epidemic diseases, against numbers declining from 892 to 391 in the six preceding weeks; of these 388 deaths 118 resulted from diarrhœa, 73 from measles, 69 from whooping-cough, 58 from diphtheria, 40 from scarlet fever, and 30 from "fever" (principally enteric), but not any from small-pox. No deaths from any of these diseases were registered last week in Hornsey, Tottenham, Reading, Aston Manor, Leicester, Bury, Blackburn, Huddersfield, or Stockton-on-Tees; among the other towns the death-rates therefrom ranged upwards to 3·0 in Grimsby, 3·2 in Rhondda, 3·9 in Great Yarmouth, 4·1 in Merthyr Tydfil, 4·7 in Hanley, and 4·9 in Burton-on-Trent. The fatal cases of diarrhœa, which had declined from 660 to 132 in the six preceding weeks, further fell to 118 in the week under notice, and caused death-rates ranging upwards to 1·1 in Oldham, 1·2 in Rhondda, 1·5 in Grimsby, 1·6 in Walsall, and 3·0 in Great Yarmouth. The deaths from measles, which had been 85 and 76 in the two preceding weeks, further declined last week to 73; the highest death-rates from this disease were 1·1 in Cardiff, 1 2 in York and in Rhondda, 1·4 in Ipswich, 2·0 in Coventry, 2·7 in Merthyr Tydfil, and 2·9 in Burton-on-Trent. The fatal cases of whooping-cough, which had been 61 and 54 in the two preceding weeks rose again to 69 in the week under notice, the greatest proportional mortality from this cause being 1·4 per 1000 in Ipswich and 1 6 in Bootle. Diphtheria was proportionally most fatal in East Ham and scarlet fever in Willesden, the rates being 1·1 and 1·4 per 1000 respectively. The deaths referred to "fever," which had been 32 and 26 in the two previous weeks, rose again to 30 in the week under notice, and caused rates ranging upwards to 1·5 in Grimsby and 3·1 in Hanley. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had risen week by week for the preceding 27 weeks from 2658 to 5604, had further increased to 5689 at the end of last week; 636 new cases were admitted during the week, against 793, 832, and 667 in the three preceding weeks. The deaths in London referred to pneumonia and other diseases of the respiratory system, which had been 245 and 204 in the two preceding weeks, rose again to 251 last week, but were 101 below the corrected average number in the corresponding periods of the five years 1902–06. The causes of 35, or 0·8 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, Bradford, Newcastle-on-Tyne, Portsmouth, and in 50 other of the 76 towns; seven uncertified deaths were registered in Liverpool, three in South Shields, three in Gateshead, and two each in London, Birmingham, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·4, 16·4, and 15·3 per 1000 in the three preceding weeks, rose again 15·9 per 1000 in the week ending Nov. 16th, and was 1·1 per 1000 above the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 9·0 in Aberdeen and 12·1 in Edinburgh, to 18·3 in Greenock and 23·6 in Dundee. The 552 deaths in these towns last week were 22 in excess of the number in the preceding week, and included 79 which were referred to the principal epidemic diseases, against 75 and 74 in the two preceding weeks; they included 33 which were referred to measles, 12 to whooping-cough, 11 to diarrhœa, ten to diphtheria, five to cerebro-spinal meningitis, four to enteric fever, and four to scarlet fever, but not any to small-pox. These 79 deaths were equal to an annual rate of 2·3 per 1000, or 1·0 per 1000 more than the mean rate last week from the principal epidemic diseases in the 76 English towns. The deaths from measles, which had been 32 and 29 in the two previous weeks, rose again to 33 in the week under notice, and included 17 in Glasgow, 13 in Dundee, and two in Perth. The fatal cases of diarrhœa, which had been 20, 17, and 18 in the three preceding weeks, declined last week to 11, of which four occurred in Dundee, three in Glasgow, and two in Aberdeen. The deaths from whooping-cough, which had been 14, 11, and 14 in the three preceding weeks, were 12 last week, and included five in Glasgow, two in Edinburgh, and two in Leith. The fatal cases of diphtheria, which had been nine and five in the two preceding weeks, rose again last week to ten, of which three occurred in Glasgow, two in Dundee, and two in Paisley. The deaths from cerebro-spinal meningitis, which had been four in each of the two previous weeks, increased to five in the week under notice, and included three in Glasgow and one each in Edinburgh and Greenock. All the four deaths from enteric fever were registered in Glasgow. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had been 88, 90, and 93 in the three preceding weeks, further rose to 104 in the week under notice, but were 19 fewer than the number in the corresponding period of last year. The causes of 14, or 2·5 per cent., of the deaths in these towns were not certified; in the 76 large English towns the proportion of uncertified deaths did not exceed 0·8 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 19·1, 21·8, and 22·8 per 1000 in the three preceding weeks, declined again to 21·4 per 1000 in the week ending Nov. 16th. During the first seven weeks of the current quarter the death-rate has averaged 20·8 per 1000, the death-rate during the same period being 14·2 in London and 13·1 in Edinburgh. The 160 deaths of Dublin residents registered during the week under notice were 11 fewer than the number in the preceding week, and included 11 which were referred to the principal epidemic diseases, against 15, 10, and 12 in the three preceding weeks; of these three resulted from measles, three from diarrhœa, two from diphtheria, two from "fever," and one from whooping-cough, but not any from small-pox or from scarlet fever. These 11 deaths were equal to an annual rate of 1·5 per 1000, the death-rate last week from the principal epidemic diseases being 1·2 in London and 0·6 in Edinburgh. The fatal cases of diarrhœa, which had declined from 23 to four in the five preceding weeks, further fell last week to three; the deaths from measles slightly exceeded the number in the previous week, while those from diphtheria and from "fever" showed no variation. The 160 deaths from all causes in Dublin last week included 34 of infants under one year of age and 47 of persons aged upwards of 60 years; these numbers were respectively seven and four in excess of the corresponding numbers in the previous week. Four inquest cases and four deaths from violence were registered; and 63, or 39·4 per cent., of the deaths occurred in public institutions. The causes of three, or 1·9 per cent., of the deaths registered in Dublin last week were not certified; in London the proportion of uncertified deaths was only 0·2 per cent., while in Edinburgh it was equal to 5 per cent.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1907.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 13·6 per 1000 of the population, estimated at 4,758,218 persons in the middle of the year; in the three preceding months the rates were 8·7, 8·2, and 11·0 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, the City of Westminster, St. Marylebone, Hampstead, and Holborn; and the highest rates in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. The prevalence of scarlet fever again showed a very marked increase over the excessive amounts recorded in other recent months; this disease was proportionally most prevalent in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, and Poplar. The Metropolitan Asylums hospitals contained 5395 scarlet fever patients at the end of last month, against 3578,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1907.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1907.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	**4,758,218**	**2**	**4225**	**1208**	**—**	**198**	**6**	**28**	**529**	**9**	**6205**	**13·6**	**—**	**63**	**110**	**87**	**89**	**—**	**32**	**—**	**422**	**803**	**1·8**	**6179**	**13·5**	**142**
West Districts.																										
Paddington	149,909	—	56	23	—	5	—	1	15	—	100	7·0	—	3	—	2	3	—	1	—	12	21	1·5	172	12·0	128
Kensington	181,842	—	68	28	—	10	—	—	15	—	121	6·9	—	—	1	3	3	—	—	—	8	15	0·9	218	12·5	130
Hammersmith	122,337	—	195	31	—	3	—	—	14	1	244	20·8	—	2	3	3	2	—	1	—	5	16	1·4	149	12·7	158
Fulham	166,749	—	111	132	—	4	—	—	11	—	258	16·1	—	2	3	8	8	—	1	—	20	42	2·6	200	12·5	140
Chelsea	74,857	—	33	15	—	7	—	1	6	—	62	8·6	—	1	—	—	4	—	2	—	6	13	1·8	98	13·7	204
City of Westminster	172,219	—	73	19	—	9	—	—	11	2	114	6·9	—	2	2	1	—	—	—	—	12	17	1·0	188	11·4	143
North Districts.																										
St. Marylebone	127,718	—	62	12	—	5	—	—	11	—	90	7·3	—	2	2	2	4	—	—	—	7	17	1·4	150	12·2	67
Hampstead	91,137	—	21	7	—	1	—	—	4	—	33	3·8	—	—	1	1	—	—	—	—	2	4	0·5	67	7·7	37
St. Pancras	236,753	1	157	48	—	5	—	1	14	—	226	10·0	—	3	1	4	3	—	—	—	17	28	1·2	323	14·2	160
Islington	347,017	—	185	67	—	12	—	5	30	1	300	9·0	—	4	3	3	2	—	3	—	36	51	1·5	453	13·6	147
Stoke Newington	53,613	—	39	43	—	2	—	1	3	—	88	17·1	—	1	1	2	1	—	1	—	2	8	1·6	60	11·7	149
Hackney	232,993	—	387	91	—	24	1	1	45	—	549	24·6	—	1	7	12	1	—	5	—	18	44	2·0	275	12·3	133
Central Districts.																										
Holborn	55,134	—	18	2	—	—	—	—	5	—	25	4·7	—	1	—	—	1	—	—	—	3	5	0·9	77	14·6	99
Finsbury	96,732	—	71	26	—	2	—	—	6	—	105	11·3	—	3	2	3	1	—	—	—	14	23	2·5	159	17·1	125
City of London	20,310	—	11	8	—	2	—	—	2	—	23	11·8	—	—	1	—	2	—	—	—	1	4	2·1	33	16·9	53
East Districts.																										
Shoreditch	115,662	—	163	35	—	7	—	1	21	1	228	20·6	—	2	4	2	2	—	1	—	26	37	3·3	210	18·9	204
Bethnal Green	130,831	—	228	41	—	10	—	—	37	—	316	25·2	—	3	10	4	2	—	3	—	16	38	3·0	208	16·6	170
Stepney	308,923	—	615	115	—	11	3	1	55	—	800	27·0	—	12	25	13	8	—	2	—	29	89	3·0	493	16·6	153
Poplar	171,086	—	250	49	—	21	—	4	22	—	346	21·1	—	6	12	5	7	—	4	—	23	57	3·5	257	15·7	164
South Districts.																										
Southwark	209,781	—	159	53	—	8	—	3	31	1	255	12·7	—	2	4	5	5	—	1	—	20	37	1·8	313	15·6	145
Bermondsey	128,263	—	147	48	—	2	—	1	22	1	221	18·0	—	2	6	3	1	—	—	—	16	28	2·3	227	18·5	173
Lambeth	318,538	1	241	39	—	3	1	—	35	1	321	10·5	—	4	6	3	5	—	—	—	23	41	1·3	406	13·3	114
Battersea	181,736	—	118	34	—	10	1	3	22	—	188	10·8	—	2	1	2	4	—	—	—	16	25	1·4	225	12·9	155
Wandsworth	281,419	—	178	74	—	10	—	1	21	1	285	10·6	—	1	4	2	5	—	1	—	25	38	1·4	321	11·9	132
Camberwell	277,059	—	237	63	—	9	—	2	28	—	339	12·8	—	2	7	2	4	—	3	—	23	41	1·5	337	12·7	141
Deptford	116,510	—	117	40	—	2	—	—	13	—	172	15·4	—	—	—	—	3	—	1	—	12	16	1·4	133	11·9	133
Greenwich	107,222	—	80	18	—	1	—	—	8	—	107	10·4	—	1	1	—	1	—	1	—	12	16	1·6	123	12·0	162
Lewisham	162,532	—	90	25	—	6	—	—	14	—	135	9·2	—	1	1	—	2	—	—	—	8	12	0·8	163	11·1	136
Woolwich	129,336	—	115	22	—	6	—	2	8	—	153	12·3	—	—	2	2	5	—	1	—	10	20	1·6	141	11·4	129
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

3709, and 4293 at the end of the three preceding months; the weekly admissions averaged 778, against 500, 469, and 654 in the three preceding months. Diphtheria was also much more prevalent during October than in the preceding month; among the various metropolitan boroughs the greatest proportional prevalence of this disease occurred in Fulham, Stoke Newington, Hackney, Stepney, and the City of London There were 1252 diphtheria patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 913, 834, and 964 in the three preceding months; the weekly admissions averaged 199, against 140, 116, and 160 in the three preceding months. Enteric fever showed a slightly increased prevalence last month; this disease was proportionally most prevalent in Chelsea, Hackney, the City of London, Shoreditch, Bethnal Green, and Poplar. The number of enteric fever patients under treatment in the Metropolitan Asylums hospitals, which had been 50, 65, and 99 at the end of the three preceding months, had further risen to 123 at the end of last month; the weekly admissions averaged 20, against nine, 15, and 21 in the three preceding months. Erysipelas was proportionally most prevalent in Hammersmith, Hackney, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 28 cases of puerperal fever notified during the month included five which belonged to Islington, four to Poplar, and three each to Southwark and Battersea. Two cases of cerebro-spinal meningitis were notified in the City of Westminster and one in each of seven other boroughs.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased persons had previously resided. During the five weeks ending Nov. 2nd the deaths of 6179 persons belonging to London were registered, equal to an annual rate of 13·5 per 1000; in the three preceding months the rates had been 11·4, 11·2, and 12 0 per 1000. The death-rates last month ranged from 7·7 in Hampstead, 11·1 in Lewisham, 11·4 in the City of Westminster and in Woolwich, 11·7 in Stoke Newington, and 11·9 in Wandsworth and in Deptford, to 16 6 in Bethnal Green and in Stepney, 16·9 in the City of London, 17·1 in Finsbury, 18 5 in Bermondsey, and 18·9 in Shoreditch. The 6179 deaths from all causes included 803 which were referred to the principal infectious diseases; of these, 63 resulted from measles, 110 from scarlet fever, 87 from diphtheria, 89 from whooping-cough, 32 from enteric fever, and 422 from diarrhœa. The lowest death-rates last month from these diseases were recorded in Kensington, the City of Westminster, Hampstead, Holborn, and Lewisham; and the highest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 63 deaths from measles were 33 fewer than the corrected average number in the corresponding periods of the five preceding years; this disease was proportionally most fatal last month in Paddington, Finsbury, Bethnal Green, Stepney, and Poplar. The 110 fatal cases of scarlet fever were more than double the corrected average number; among the various metropolitan boroughs this disease showed the greatest proportional mortality in Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 87 deaths from diphtheria were ten in excess of the average for the corresponding weeks of the preceding five years; the highest death-rates from this disease occurred in Fulham, Hackney, Finsbury, Bethnal Green, and Stepney. The 89 fatal cases of whooping-cough were 26 above the corrected average; this disease was proportionally most fatal in Fulham, Chelsea, St. Marylebone, the City of London, Poplar, and Woolwich. The 32 deaths from "fever" were only about one half the corrected average number in the corresponding period of the five preceding years; of these 32 deaths five belonged to Hackney, four to Poplar, three each to Islington Bethnal Green, and Camberwell, and two each to Chelsea and Stepney. The 422 fatal cases of diarrhœa were 96 in excess of the average; this disease showed the highest proportional fatality in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 18·4 per cent. above the corrected average. Infant mortality, measured by the proportion of deaths under one year of age to registered births, was equal to 142 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Hampstead, Holborn, the City of London, and Lambeth; and the highest rates in Chelsea, St. Pancras, Shoreditch, Bethnal Green, Poplar, Bermondsey, and Greenwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: Deputy-Inspectors-General: A. J. J. Johnston to Haslar Hospital and J. J. Dennis to Plymouth Hospital. Staff-Surgeon: M. P. Jones to the *Wildfire*, in lieu of a surgeon, temporary.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Harold George Hathaway has joined at Devonport for duty as officer in charge of the Military Hospital in place of Colonel John Matthew Jones, appointed on promotion to Egypt as principal medical officer. Captain P. S. O'Reilly has arrived at Portsmouth for duty. Lieutenant Colonel C. A. Lane has been appointed Senior Medical Officer, Administrative Staff, Ceylon, vice Lieutenant-Colonel G. H. Sylvester. Colonel H. Martin has been appointed Principal Medical Officer, Administrative Staff, South China.

INDIAN MEDICAL SERVICE.

Captain E. C. Hepper has been appointed Civil Surgeon in the Khyber Agency and Medical Officer, Khyber Rifles.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Arthur P. Nuttall to be Surgeon-Major (dated Nov. 13th, 1907).

VOLUNTEER OFFICERS' DECORATION.

The King has been graciously pleased to confer the Volunteer Officers' Decoration upon the under-mentioned officers of the Volunteer force:—

Eastern Command: Royal Garrison Artillery (Volunteers): 1st Kent: Surgeon-Major Richard John Bryden.

London District: Infantry (Volunteers): 13th Middlesex (Queen's Westminster) Volunteer Rifle Corps: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel Philip Percival Whitcombe. 20th Middlesex (Artists') Volunteer Rifle Corps: Surgeon-Major Henry Darville Brook. 24th Middlesex Volunteer Rifle Corps: Surgeon-Captain (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) Charles Graham Grant.

Northern Command: Royal Garrison Artillery (Volunteers): 1st East Riding of Yorkshire: Surgeon-Major Thomas McCraith Foley.

DEATHS IN THE SERVICES.

Fleet-Surgeon Frederic Harvey, R.N., on Nov. 12th, in London, in his eighty-ninth year. He entered the service in 1839, became staff-surgeon in 1849, and fleet-surgeon in 1861, retiring in 1874. In 1840–41 he accompanied the expedition which was sent to explore the ruins of the ancient city Xanthus, in Lycia, and in 1842–43 was in medical charge of the officers and men appointed to search for sculptured tombs and marble antiquities in Xanthus. In the *Sphinx* and *Winchester* he took part in the Burmese War of 1852–53 (medal and clasp).

THE GOVERNMENT CONTROL OF FEES FOR PRIVATE PRACTICE IN INDIA.

We have on several occasions alluded to the departmental control exercised over officers in the Indian Medical Services with regard to the fees which they require for attendance on wealthy Indian chiefs and gentlemen, and in an annotation on Oct. 5th, p. 975, we dealt with the recent order that in future the director-general of the service shall be their assessor instead of the civil authorities, as hitherto. A correspondent sends us a leading article from the *Pioneer* for Oct. 26th and we are glad to see that that influential paper agrees that any such restrictions are vexatious both to the medical men and the patients concerned. After commenting on the over-cautious policy which has prompted such a course the *Pioneer* very justly remarks: "Especially invidious it is that this spirit should be manifested towards the officers of the Indian Medical Service who do more purely gratuitous work for the people than all the rest of the Government services put together." We trust, with the *Pioneer*, that the system may be abolished.

MR. HALDANE ON THE TERRITORIAL FORCE.

We note with satisfaction that the Minister for War is taking the future combatant members of his Territorial Force into his confidence in the same kind of way that the Director General of the Army Medical Service has taken his professional brethren. At a dinner of the 4th V.B. Royal Fusiliers (City of London Regiment) on Nov. 18th Mr.

Haldane was the honoured guest, and made an interesting speech dealing with the relationship of the county officials with the new force. An interesting letter from the Duke of Grafton appeared in the *Times* of Nov. 8th suggesting the enrolment of an extra force of volunteers specially enlisted for foreign service in case of war and wearing the uniform of the regiments to which they should be affiliated. Whatever modifications Mr. Haldane sees fit to make in his scheme we trust that he will receive as warm support from that part of the nation which is capable of bearing arms as Sir Alfred Keogh seems in a fair way to gain from those of us who can better serve the Territorial Force in its medical and sanitary branches. As we have repeatedly said, this latter scheme has our warm support.

Field Ambulance Training.

Ten officers and 182 other ranks of the Royal Army Medical Corps were trained in field ambulance duties on Salisbury Plain between June 19th and July 10th, during which time a field ambulance was mobilised for their instruction. All ranks were thus thoroughly familiarised with field ambulance work as well as in the practical carrying out of the details connected with camp sanitation. At the manœuvres in September the newest forms of sanitary precaution and the effective sanitation of camps were rigidly enforced. It is now becoming more generally understood that such matters cannot any longer be left entirely to medical officers and regimental quartermasters but that the combatant officers must also bear their share in a work on which the efficiency of their commands so greatly depends. During these manœuvres the troops of the command enjoyed a great immunity from sickness.

The *Times* states that an official notification has been received to the effect that the Old Palace, Maidstone, the headquarters of the local Volunteer Medical Staff Corps, is shortly to be raised to the status of a Territorial Army Medical School.

The *Broad Arrow* announces that from March 1st next all lieutenants in the army will be required to pass an examination in sanitation before promotion to the rank of captain. All ranks are to receive instruction in the subject as well as cadets.

Correspondence.

"Audi alteram partem."

THE COMPULSORY NOTIFICATION OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—At the Public Health Congresses of the last three or four years, and in recent reports on the subject, there has been considerable unanimity as to the need for compulsory notification of phthisis and of at least the other "open" forms of human tuberculosis and as to the comparative failure of the voluntary system of notification (in regard to the number of notifications received) in most districts where it has been tried. It has been shown that the voluntary system has been attended with success sufficient to indicate the greater good which could be done if the compulsory system were in force.

I, for one, therefore was rather dismayed and surprised to read the arguments recently advanced at the Vienna Congress against the compulsory system by Dr. Nathan Raw of Liverpool and supported by Dr. E. W. Hope, the medical officer of Liverpool, and by yourselves, for the opinions of such eminent authorities are of great weight and receive universal attention. All are agreed as to the necessity for the utmost possible being done (1) to treat the victim; (2) to prevent him from being a danger to others—in other words, to protect the unattacked; and (3) to do so with the least possible hardship to the victim. "On the other hand," says Dr. Raw, "there are a large number of cases of what are called 'open tuberculosis'—that is, those which are discharging tubercle bacilli, either in the expectoration or through wounds—who are a very serious danger to the community and who in the interests of others must be controlled."

Dr. Raw's objections to compulsory notification are as follows: (*a*) "Tuberculosis being, unfortunately, in the majority of instances a slow and chronic disease, cannot be classed in the same category as the acute specific infectious diseases, such as small-pox, scarlet fever, diphtheria, &c." Quite so; but in public health practice to-day we do not treat notified cases of erysipelas and puerperal fever in the same manner as those of small-pox, or cases of enteric fever like those of diphtheria; we treat each of the diseases at present compulsorily notifiable in different ways, because they are not all infectious in the same manner, and they are not equally dangerous. And we should treat notified cases of tuberculosis, even of the "open" type, on distinctive and appropriate lines. We do so to-day under the voluntary system, and I am not aware that any hardship has been inflicted under that system, in my own city at any rate. I do not see that the administration of the compulsory system would vary, or need vary, so greatly from the voluntary system. The latter would chiefly be extended so that we should receive a larger number of notifications and thus have fuller knowledge of the existence of tuberculosis in our midst, and we should be able to obtain compulsory disinfection in those numerous infected houses where at present we have no such desirable power. Compulsory notification of tuberculosis would no more involve the removal of the patient to hospital than the present compulsory notification of a case of scarlet fever does. The continuance of the employment of an "open" case of tuberculosis is a question of some difficulty certainly, and would sometimes involve anxious consideration, but, as Dr. Raw says, "in a large majority of cases, with ordinary care, the consumptive is not a danger to those around him," and the dangerous cases would have to be treated with leniency until helpful measures for the consumptive (sanatoria, isolation hospitals, colonies, financial relief, &c.) have attained to the greater developments which must surely come about in this country in the course of another quarter of a century. In this city, under the voluntary system, we do not interfere with the employment at all. We inspect, advise, disinfect, and help as much as we can. We greatly regret we do not know of more cases to help in similar manner.

(*b*) The second objection is that the medical practitioners are strongly opposed to notifying tuberculous patients, because confidential relations between medical man and patient would be broken or severely strained. That is largely the reason why medical practitioners do not notify more cases under the voluntary system. But such relations would not be strained if notification were legally compulsory; there would then be no voluntary breach of confidence, any more than there is to-day under the Infectious Diseases Notification Acts. Compulsory notification might be limited, at first at any rate (under a special Act), to those cases of "open" tuberculosis where the practitioner thinks that the sanitary authority could wisely help; "breach of confidence" would then be covered by the compulsory character of the Act. But, better still, *all* cases of tuberculosis, open or closed, rich or poor, should be compulsorily notifiable for statistical purposes, and the practitioner could be allowed to say on his notification whether the help of the sanitary authority was desirable or was *not desired*, and action, or no action, by the sanitary authority would follow accordingly. As a matter of fact, I have found that better-class patients are always the most anxious for disinfection by the sanitary authority after cases of phthisis, and with them there is really no other preventive work which cannot well be left to them and to their medical advisers. With the poorer classes, however, the sanitary authority can wisely renew calls of advice and inspection from time to time and remedy overcrowding or other insanitary conditions as they occur.

In order to meet the above objections and difficulties I would suggest that human tuberculosis be made compulsorily notifiable under a separate special Act, not added to the list of infectious diseases in the Infectious Diseases Notification Acts of 1889 and 1899. In such a special Act all reasonable safeguards could be embodied, and I do not think, then, that we need fear that Dr. Raw's third objection (*c*)—viz., "that a large number of sufferers would decline to consult medical men for fear of being notified, and would pass into the hands of the quack and the charlatan," would be realised, any more than it is to-day with the ordinary infectious diseases. (Would that the leaders of the medical profession would compel the Government to put a stop to all quacks and charlatans!)

The latter part of Dr. Raw's paper appears to me largely to contradict the objections to compulsory notification stated in the first portion. He suggests various alternative measures, all excellent in their way—e.g., (1) municipal dispensaries

for poor patients where "all cases would, of course, be notified by the officials." But why "of course"? Would not some of the above objections hold just the same? Under what Act would they be notified? 2. Advanced cases to be compulsorily removed to an institution. 3 Consumptive persons to be prevented from working at a dairy farm or having anything whatever to do with the handling of meat, milk, or other food. 4. Disinfection of houses after death. 5. Compulsory inspection of hotels and boarding houses. 6. Separation of children from consumptive adults. How all these good works are to be accomplished without compulsory notification and its consequent powers is not quite clear. How are health authorities to hear, otherwise, of all the cases and houses for which such measures are desirable? But, indeed, Dr. Raw appears in the end to favour a modified form of compulsory notification, and two of the chief reasons for such notification were embodied in the resolution of the Congress.

Greatly interested in the discussion of this vital subject,

I am, Sirs, yours faithfully,

EDMUND M. SMITH,
Medical Officer of Health of the City of York.

Health Office, Guildhall, York, Nov. 18th, 1907.

THE ARMY AND NAVY MALE NURSES' COÖPERATION.

To the Editors of THE LANCET.

SIRS,—May we beg the indulgence of your columns to appeal for funds for the Army and Navy Male Nurses' Coöperation? This society, which is honoured by the patronage of Her Majesty the Queen, is founded with the object of supplying to the public thoroughly well-trained male nurses and sick attendants of assured good character.

The *personnel* of the society is composed solely of men who have been trained in the great military and naval hospitals—viz., of men of the nursing section of the army who have obtained their certificates of three years' training and, in the case of the navy, of members of the sick-berth staff who have completed their first term of service. The nurses on the register receive the full fees they earn, less a small reduction for working expenses. The Coöperation would appeal for help to those who feel that efficient male nurses should be more extensively employed in civil life, and that certain cases should not be nursed by women at all. It should appeal also to the many who wish to see employment found for men of exceptional character after they leave the two great services.

When the society is once started it will be self-supporting. Funds are needed to defray the initial cost of providing and equipping a suitable office to be available day and night, of advertisements, and of obtaining a small house where the men can lodge when waiting to be despatched to their cases. This latter requirement is essential in the interests of the patients served and for the securing of prompt response to all applications. It is estimated that the sum of £2000 will put the society upon a sound basis and enable it to commence its work at once.

Donations may be sent to the honorary treasurer at the office of the society, 47B, Welbeck street, Cavendish-square, London, W., where fuller information may be obtained.

We beg to remain, Sirs, yours faithfully,

FREDERICK TREVES.
HOWARD H. TOOTH.

Nov. 18th, 1907.

ON MOBILITY OF THE KIDNEYS.

To the Editors of THE LANCET.

SIRS,—The communication on Mobility of the Kidneys by Dr. Hector Mackenzie, which appeared in THE LANCET of Oct. 26th, p 1140, afforded me great interest, more especially as the conclusions at which he arrives and which are based on the examination of a large number of patients are at variance with my own in almost every particular with the exception that we concur in regarding the condition as one of frequent occurrence.

The history of my personal study of the subject of moveable kidneys is divided into three epochs: the first, during which I regarded the condition as an anatomical curiosity; the second, when I had noted the frequency of its occurrence; and the third, or present epoch, in which I recognise the clinical importance of its presence. Indeed, I believe that a considerable proportion of the chronic invalids who, classed indiscriminately as neurasthenics, wander from pillar to post in search of health are sufferers from symptoms of which moveable kidney is the cause.

The neurasthenic I regard as a sufferer from auto-intoxication, the toxins being excretory products which, instead of being normally excreted, are reabsorbed into the blood stream. Assuming that a healthy kidney is performing its excretory function in a normal manner but that owing to partial obstruction of the ureter by pressure on it of the inferior pole of a dropped kidney the free outflow of urine is impeded and a condition arises in which there must be reabsorption of excretory products. In this case the symptoms of auto infection are due to the dropped kidney impeding the outflow of urine. Again, the perinephritic fibrosis which frequently involves a slightly moveable kidney and is probably the result of chronic intermittent friction may, and probably does, interfere with the normal excretory processes. So far the argument is based on *a priori* evidence, but the following case serves to show that a slightly moveable kidney may give rise to a train of marked symptoms from which relief may be obtained by fixation of that organ, even when the second kidney is highly moveable.

The case was that of a married woman, aged 37 years. The patient suffered with periodic headaches of such intensity that I feared she might be driven to do something desperate in order to terminate her sufferings. The abdomen was distended with gas, a condition which added greatly to her discomfort and suffering. As the case is reported in THE LANCET of April 9th, 1904, I will confine this account to its broad bearings on the present argument. I took the case to Professor Roux at Lausanne. In his clinique he made an examination of the urine escaping from each ureter separately by means of Luys's bi-ureteral collector, a pill of aniline blue having been administered 20 minutes earlier. The result of this examination was that about equal amounts escaped from each ureter but the secretion from the left one was the paler, a fact readily discerned by the unaided eye. To quote from the original report: "With these facts before us the question was whether the headaches depended on the condition of the kidneys, if on one more than the other, on which, and whether operative treatment was likely to afford relief." I decided that the left slightly moveable kidney was the one to select for operation and was relieved to find that Professor Roux had arrived at the same decision. The kidney was exposed, explored for calculus, freed from fibrous adhesions, and fixed in position. The result is that the patient has not had a bad headache from that day to this, four and a half years after the operation, her abdomen has returned to its normal girth, which affords her great satisfaction and she is able to fulfil her duties and enjoy life to the utmost; in fact, after leading a life of suffering for years, she is now a healthy and happy woman.

This case affords material for criticising many of the points touched on by Dr. Mackenzie. In the first place he would not have classified the left kidney in my case as a moveable kidney but as a "palpable kidney." Now the term palpable kidney, as used by Dr. Mackenzie, seems to me to be unsatisfactory, for it includes two conditions, viz., a slightly dropped kidney and a kidney which is not moveable, but which may nevertheless be felt on account of an abnormally low position or of slight enlargement. Clinically the difference can be readily appreciated, for while the dropped kidney can be made to glide from between the two hands by exerting pressure with the finger-tips the fixed kidney will only recede with the movement of expiration to return with the succeeding inspiration. It does not move independently of the diaphragm. The term "palpable kidney" might be applied with equal force to the highly moveable kidney as to that which is but slightly moveable, but it is not a convenient term, for it neither necessarily includes all the degrees of moveable kidney nor does it exclude all the kidneys that are not moveable.

To pass on to another point. Dr. Hector Mackenzie seems to regard the degree of mobility of the kidney as the index of the gravity of the symptoms to which it may give rise. My observation has led me to take a view which is entirely opposed to this. The highly moveable or floating kidney seems to move about freely behind the coils of intestine without giving rise to the train of nervous symptoms which frequently coexist with the slightly moveable kidney. The former, indeed, may give rise to local signs and symptoms, such as thickening of the peritoneum, irritation of the bowels, occasional attacks of pain resembling renal colic and

terminating with a free flow of thick urine, and occasionally to a sensation of something loose in the abdomen, but these conditions are not associated with the chronic ill-health, pain localised in the region of the kidney, severe headache and radiating neuralgia which characterise the slightly moveable or dropped kidney. The *highly moveable* is in my experience usually the *right* kidney, the *slightly moveable* one is the *left*. The former I have learned to regard as compatible with a normal state of health but more frequently as giving rise to mechanical irritation of neighbouring organs and leading to chronic inflammatory fibrosis of the surrounding connective tissues. The latter, less easily recognised, less frequent perhaps, is almost always associated with a condition of ill-health which incapacitates the patient from pursuing his vocations with any degree of comfort and frequently leads to a life of chronic and permanent invalidism. The cases reported by me in 1895[1] illustrate some of the points to which I have here alluded.

Since that date I have met with a very large number of moveable kidneys, and of late years I have learnt to recognise the group of symptoms and the individual mental peculiarities which together characterise the presence of a moveable kidney. I do not recall having on one single occasion examined a patient in whom I expected to find a moveable kidney without having had my suspicions of the existence of that condition confirmed by the examination. Such being the case, it seems reasonable to attribute the characteristic train of symptoms present to the constant and only existing organic abnormality with which it is associated. With regard to the mental attitude of the patient with moveable kidney, it strikes me as affording certain peculiarities. He is often classed as a neurasthenic, but he is a neurasthenic of a modified type; though frequently depressed he is not despondent; having suffered much and found but scant relief from a frequently long tale of therapeutic measures, he has not lost courage or confidence that a better time is in store for him; unable to undergo fatigue of body or mind without paying an immediate penalty in the shape of great exhaustion, abdominal pain, and severe headache, he remains willing and anxious to exert himself to the utmost extent of his limitations; in fact, he is a patient who inspires us with the feeling that there is something radically wrong which might be remedied if we could only put our finger on the right spot. To complete the picture, in the majority of cases *he* is a female.

With regard to treatment, there is the plan of treating symptoms and ignoring the kidney—a plan of greater benefit to the practitioner than to the patient. Then there is the compressing pad, held in position by a bandage, a belt, a corset, or a steel spring. Of these, the bandage answers fairly well in the case of the male patient; in the case of the female it is very difficult of application on account of the great breadth of the hips and the compressibility of the waist; the shaped belt is heavy and cumbersome; the corset is fairly efficacious and is the favourite appliance with the Paris surgeons; the C-spring is in my experience the most perfect form of appliance for supporting the kidney, but it exhibits in a proportionate degree the disadvantage inseparable from all forms of compressing pads—viz, apart from impeding the movements of the intestines, it produces marked atrophy of the structures on which it impinges.

I have met with a case of dropped left kidney where a C-spring pad had been in use for several years and in which the subjacent part of the abdominal wall seemed no thicker than a sheet of stout brown paper. This case was instructive in more ways than one, for it happened that the C-spring having been left off for a time the kidney dropped and there resulted a prolonged attack of intense pain which had to be met by injections of morphine and also a condition of extreme hydronephrosis. The latter was undoubtedly produced by pressure of the lower pole of the kidney on the ureter and it underwent resolution with free passage of urine, the kidney eventually returning to its normal size. Hence, I regard the pad in all its forms as a measure essentially unsatisfactory but which may be employed as a "pis aller," either when the operation for fixation is declined by the patient or as a temporary measure which, in combination with exercises of the lumbar and abdominal muscles, may restore the kidney to a state of normal stability. With this object in view, Professor Roux of Lausanne directs the young patient with moveable kidney to run, jump, bicycle, and exercise the waist muscles in every possible way.

[1] Brit. Med. Jour., May 4th, 1895.

An appreciation of the clinical varieties of moveable kidney is of importance as a guide to treatment and the following classification suggests itself as of practical utility.

1. The acutely produced moveable kidney resulting from some extraordinary muscular effort. This gives rise to severe local pain and acute general symptoms. The diagnosis, provided the displacement is recognised, scarcely admits of question, and immediate fixation by surgical means is the best treatment. Such a case was operated upon for me by Professor Catani of Florence with a most satisfactory result.

2. The post-operative moveable kidney resulting from general weakness of the abdominal walls after laparotomy or other operation involving extensive division of the abdominal muscles. This variety apparently lends itself to the use of a well applied pad, with a fair prospect of eventually remaining in position without support or operative fixation. Personally, I have not had an opportunity of verifying this result.

3. The right moveable kidney; sometimes "dropped," more often freely moveable in the abdominal cavity. This condition may exist without giving rise to any marked symptoms; often, however, it is associated with painful local symptoms of intermittent occurrence which do not otherwise interfere with the general well-being of the patient; less frequently it is associated with a state of chronic ill-health, of which it is probably in most cases the cause. The freedom and range of movement of the kidney afford no index to the gravity of the symptoms to which the displacement gives rise, the less moveable kidney being often associated with a marked train of symptoms, while when highly moveable the organ may exist coincidently with a state of ordinary good health. The indications for treatment depend on the gravity of the symptoms and not on the presence of displacement or on the degree of mobility of the organ. In the absence of symptoms no attempt should be made either to support the kidney or to stitch it in position. On the other hand, when attacks of local pain are of frequent occurrence or when there is chronic ill-health the kidney should be stitched in position as soon as convenient or after trial of some sort of pad for a limited period to ascertain if by that means the kidney will afterwards retain its normal position without any form of artificial support. The indications for treatment in the large number of cases which occupy the interval between the cases presenting no symptoms and the cases associated with severe symptoms are less obvious. But if we discard the pad as an undesirable appliance for permanent use it reduces the problem to *operation* or *no operation*. The answer will here depend on the individual estimate of the *raison d'être* of life. If this is *work*, then the election will be in favour of operation, which course offers a fair prospect of raising the potential efficiency of the individual. If, on the other hand, a morbid existence seems preferable to the effort which involves a brief period of suffering, discomfort, and risk, then the decision will be in favour of "no operation."

4. The moveable left kidney; the mobility here is often slight in degree, while the local and general symptoms are usually severe. The indications for treatment are consequently, as a rule, more obvious when the condition is recognised than they are in the case of the right kidney and suggest the same line of procedure—viz., operative fixation.

5. Both kidneys moveable; where this condition exists in association with a severe train of symptoms the difficulty of diagnosis lies in determining which of the kidneys is the more actively responsible for the existing condition. The general principles on which I have already insisted—viz., that the less moveable kidney is often the more faulty one and that the left is more justly open to suspicion than the right—will aid in coming to a decision, while the practice of examining the outflow from each ureter separately, for which purpose Luys's bilateral collector seems the most practical instrument, should, I think, precede every operation for moveable kidney, in order to ascertain the relative functional activity of the two organs. The incidence of nephritis on one side would greatly increase the risk of uræmia in the event of operation on the healthy but possibly more freely moveable organ. Moreover, if the general symptoms associated with moveable kidney are uræmic in nature, as is probably the case, they would not be relieved by fixation of the highly moveable but more healthy organ and the case would go to swell the tale of unsuccessful operations for moveable kidney and to bring discredit on a procedure which promises much to all classes of society, save to the general medical practitioner.

I feel much indebted to Dr. Mackenzie for having prompted me by his exhaustive communication to review the clinical aspects of a condition which has been of much interest to me since I met with my first case 16 years ago. This case was reported in THE LANCET. On the occasion of the first examination I told the patient he had a dislocated organ but that I was not sure whether it was the spleen or the kidney. Some time afterwards he told me that this alternative diagnosis had inspired him with great confidence, for one of his former medical advisers who suffered with heart disease told him he had a weak heart, while a second who was a dyspeptic treated him for gastric symptoms. My patient thought it unlikely that I could be a sufferer from both a dislocated spleen and kidney and thence inferred that my diagnosis might be regarded as unprejudiced. Since that time a large number of cases have passed through my hands, generally applying to me for the relief of some intercurrent disorder. Unfortunately, the majority remain in my hands for a short time only, affording material for recognising the frequency of the condition in connexion with a special train of symptoms, but not long enough for me to impress the patient with a proper appreciation of the importance of his abnormality in relation to his permanent health and life-work.

I am, Sirs, yours faithfully,

Montreux, Nov. 11th, 1907. STUART TIDEY.

To the Editors of THE LANCET.

SIRS,—In your issue of Oct. 26th Dr. Hector Mackenzie contributed an interesting paper on Mobility of the Kidneys. Some of the statements therein may tend, if accepted as final by those whose experience has been limited, seriously to retard further research in this important subject and will, in addition to leaving many patients with their condition undiagnosed, therefore unrelieved, allow experts in other countries to leave us as far behind in this matter as we have been in some others. I therefore desire to draw attention to some of these statements, not in a controversial spirit, but because it would be wrong not to inquire fully and learn all that is possible from every source on this subject, especially as some medical students are *still* being taught that the "condition does not exist." On p. 1140 Dr. Mackenzie says:—

> I strongly deprecate such teaching as "minor degrees of mobility of the kidneys are the unrecognised causes of much suffering and distress." I do not think there is a particle of evidence that this is the case and I regard the slight degrees as of trivial importance.

Gelston Atkins of Cork read a paper at the annual meeting of the British Medical Association in 1905, in which he states:—

> I am firmly convinced that even when a freely mobile kidney is not found, in a large number of atonically dilated stomachs, cinder-sifting kidney will be found and that this exerts an influence on either the pylorus or the duodenum, narrowing its lumen, and so acting as a cause of pyloric obstruction, and then the weakened muscular tissue of stomach stretches under the back pressure of the food that cannot be propelled through the narrowed pylorus.

Aufrecht of Magdeburg in the *Therapeutische Monatshefte*, Berlin, September, 1907, wrote:—

> My opinion coincides with Suckling's, that the greater degree of the kidney displacement is not always to be considered of the greater importance.

In his paper (p. 1141) Dr. Mackenzie says:—

> Some have advocated that the examination should be conducted with the patient standing up, but I am sure that position has no advantages and has very obvious disadvantages as a routine method, although sometimes it is useful to employ it in addition to the other.

Nephroptosis means a fallen or dropped condition of the kidney, therefore after the older method of examination the standing or sitting one is an additional help to the diagnosis and should be always used as well as the recumbent. I consider the two following advantages may be claimed for it: First, a kidney will be more easily palpated by those who have not had the opportunity of frequent palpation of the abdomen; and secondly, the extent of the prolapse can be more quickly and accurately ascertained and with less distress to the patient. I have found kidneys drop as much as ten inches in the erect position which could not be felt lying down. On p. 1141 it is said that—

> To call a kidney of which one can merely feel the lower end below the ribs a "dropped" or "dislocated" kidney is a "terminological inexactitude."

Dr. Mackenzie will find in Gray's "Anatomy," 1905, p. 1118, the following: "*Surface form.*—The kidneys, being situated at the back part of the abdominal cavity and deeply placed, cannot be felt unless *enlarged* or *misplaced*." In his paper (p. 1141) Dr. Mackenzie says:—

> An observer who makes the astonishing statement that of 100 women and 100 men whom he had seen during the past few weeks in private, 42 women and six men had dropped kidney, may be said to have a somewhat exaggerated idea of what constitutes that condition.

The above sentence was taken from my first communication on the subject entitled, "Moveable or Dropped Kidney and its Relation to Diseases of the Nervous System," which I read at Edinburgh at the annual meeting of the British Medical Association, 1898; it was published in the *Edinburgh Medical Journal* and given to the profession. I still have all the notes of the 200 cases referred to in that paper. I find that the experience of the following nine years has given me about the same percentage. I accept Dr. Mackenzie's figures of his cases as correct. He further says (p. 1144):—

> I am inclined to think that most of the cases which surgeons operate on go to them directly and not through the advice of a physician.

This is undoubtedly and unfortunately true. In one of the annual reports of the Queen's Hospital, Birmingham, within the past three years will be found recorded about 25 cases of moveable kidney operated upon and noted "cured," whereas only one case of moveable kidney was noted on the medical side out of many thousands. According to Dr. Mackenzie's statistics there must have been many such cases undiagnosed. I have advised and been present at over 200 nephropexies, seeing the kidneys in all of them (perhaps a unique experience for a physician), and from the satisfactory and enduring results, where the technique was good, shall never hesitate to place such cases in the hands of competent surgeons. In a neurological experience of 25 years, where there have been great opportunities for comparing cases of insanity, migraine, &c., caused by moveable kidney and cured by nephropexy, and cases with the same troubles having no abnormal renal complication—I have frequently regretted the absence of the mobility—as where it existed I have cured the patient, and in many cases where it did not exist my treatment was not so satisfactory.

When I read the paper in Edinburgh in 1898 I hoped that the belt therein mentioned (made by Salt of Birmingham), which was shown at the meeting and illustrated in the journal, would be so efficacious that operations would be unnecessary. In a second paper under the same title which I published in 1903 and gave to the profession I had to confess *I was wrong*, for that in many cases where I had advised the belts, and they had been used for varying periods, I had ultimately been obliged to advise operation. On p. 1143 Dr. Mackenzie says:—

> All kinds of nervous symptoms have been attributed to moveable kidneys. ..... Migraine, vertigo, all kinds of neuralgias, epilepsy, neurasthenia, hypochondriasis, and various forms of insanity have been at divers times referred to moveable kidneys as their cause. Search among these cases and you will find the same proportion of moveable kidneys as in other complaints, but there is not a tittle of evidence that there is any causal relation between them.

In February of this year I published a brochure on "Insanity Cured by a New Treatment," with details of 21 cases, and gave it to the profession, including Dr. Mackenzie. It contained cases with many of the above symptoms where insanity ultimately supervened. I desire with many others to learn from every source on this subject. If this is to be done in a proper scientific spirit, may I suggest that such expressions as "terminological inexactitude" be omitted. One frequently feels disappointed at the lack of open inquiry into one's researches, so that I ask Dr. Mackenzie to accept this communication in the spirit in which it is written—i.e., a profound interest in the subject which I have been investigating for nearly 15 years.

A recent article published in the *British Medical Journal* entitled "The Scientific Temper" will help many of us in our uphill battle of research to be patient under both just and unjust criticism.

I am, Sirs, yours faithfully,

Birmingham, Nov. 11th, 1907. C. W. SUCKLING, M.D. Lond.

UNDERFED CHILDREN.

To the Editors of THE LANCET.

SIRS,—Will you kindly permit us to appeal through your columns to the charitable public on behalf of the underfed children attending our elementary schools.

For many years past the *Referee* Children's Dinner Fund, the London Schools Dinner Association, and other associations have rendered valuable assistance in collecting and

distributing funds. With these associations the Council is in close connexion and every effort is being made to bring the Council, the associations, and the schools into such relationship as will result in a highly efficient organisation for relieving distress. The winter will soon be upon us, when distress must inevitably increase, and in order to meet the needs of the children the Council is anxious that at least £15,000 should be raised.

The Council considers that it would be a great misfortune if voluntary contributions, which have hitherto met the demand, should fail to continue to do so. If, however, the response is not adequate this winter there will probably be no alternative in the winter of 1908–09 but to resort to the rates. The Council has voted a sum for equipment and appliances and will place every convenience at the disposal of the associations through the medium of the Children's Care Committees which have been appointed for every necessitous school. These committees will make all possible effort to insure the most careful discrimination in the selection of those children who are really in need of help.

Contributions may be sent to (1) the *Referee* Children's Dinner Fund, honorary treasurer, Mrs. Burgwin, 147, Brixton-road, S.W.; (2) the London Schools Dinner Association, honorary treasurer, the Right Hon. Lord Kinnaird, 1, Pall Mall East, S.W.; (3) any of the other associations coöperating with the Council; or to one of us the undersigned,

H. PERCY HARRIS,
Chairman of the London County Council, 98, Gloucester-terrace, Hyde Park, W.
JOHN T. TAYLOR,
Chairman of the Education Committee, 19, Woodchurch-road, Hampstead, N.W.
E. A. H. JAY,
Chairman of the Subcommittee on Underfed Children, Tower House, Woolwich.

Nov. 14th, 1907.

THE UNIVERSITY OF LONDON AND ST. GEORGE'S HOSPITAL.

To the Editors of THE LANCET.

SIRS,—Sir Arthur Rücker, in the letter which appeared in your columns on Nov. 16th, stated that he was not aware at the time of our negotiations that any steps taken by St. George's Hospital were dependent upon the assurances given us by the University delegates on the question of a third centre. If he will reflect he must see that unless we had been principally concerned about the third centre our negotiations with the University would not have taken place. At the date of our negotiations neither King's College nor University College were incorporated with the University. If we had been content to transfer our students to these Colleges obviously we should have negotiated with them direct. Westminster Hospital was not interested in sending its students to the third centre and therefore negotiated direct with King's College. We asked the chairman of the University delegates, Sir Henry Roscoe, to give us the terms of the arrangement between Westminster Hospital and King's College. Sir Arthur Rücker immediately intervened and said that such information could not be given, that Westminster Hospital was not interested in the third centre, and that therefore its negotiations with King's College were on a different footing from ours.

To show how much the question of a third centre entered into our negotiations, may we remind Sir Arthur Rücker of a further point. Just before one of our conferences it was suggested to us that rooms were available at the Imperial Institute to house the students of St. George's Hospital and St. Thomas's Hospital at once. We asked the University delegates whether this was so and the question was discussed. The suggestion of the St. George's representatives that we should make a start at once in the Imperial Institute was negatived, mainly on the ground of lack of space, but the fact that it was made is sufficient to show what a leading part the third centre played in our negotiations.

Sir Arthur Rücker asks why we did not include in our "agreement" the fact that the University had decided to pursue the policy of erecting a third centre for medical studies at South Kensington. In view of the fact that the University was publicly appealing for money for this purpose, any suggestion from us that this should have been included in the record of our conferences would have been an impertinence. As a matter of fact, our "agreement" referred only to the payment of lectures and the payment of fees. If no money question had arisen we should have had no "agreement" at all. We waived the question of a formal legal document in response to a suggestion to this effect received in writing from the University on July 28th, 1905. We did so the more willingly because we had previously written to the Principal as follows: "In joining University College and King's College we wish it to be clearly understood that we desire to have our students at a centre nearer to the University as soon as one is established."

It is true that the Principal wrote saying that it was uncertain when the third centre might be started, but no one ever ventured at that time to suggest the possibility of the third centre never being started at all. Events have shown that we should have been wiser if we had insisted at the time in having a legal document embodying the whole question drawn up, but this does not in any way diminish the moral obligations of the University.

It must, we think, be obvious to any impartial person that we at St. George's Hospital were convinced at the time of our negotiations that the University intended to pursue its avowed policy and that we were legislating for the immediate, and not the distant, future. Both Sir Arthur Rücker and we regret the misunderstandings which appear to have arisen. There can, however, be no misunderstanding about the following facts. 1. The University appealed for money to establish a third centre. 2. On the strength of this appeal St. George's Hospital sent its students to King's College and University College, pending the erection of a third centre. 3. Sufficient money and land have been acquired by the University to meet the requirements of the schools which are willing to support the University's policy.

May we add in conclusion that we do not understand the position of the Principal of the University in this matter. As soon as the authorities of St. George's Hospital learnt that there was the least suspicion that the University would be urged to go back upon its avowed policy, the treasurer wrote to the Vice-Chancellor pointing out our position. This letter was sent and acknowledged six months ago. No official reply, however, has reached us even now. In spite of that, the Principal of the University has communicated an opinion on the questions at issue to a political party within the Medical Faculty. We would ask, therefore, whether in this unfortunate controversy the Principal represents the University or whether he represents the University delegates of whom Sir Henry Roscoe was chairman, or whether he is expressing his own opinion?

We are, Sirs, yours faithfully,

A. WILLIAM WEST,
Treasurer of the Hospital.
ARTHUR LATHAM,
Formerly Dean of the Medical School.
F. JAFFREY,
Formerly Dean of the Medical School.

St. George's Hospital, S.W., Nov. 18th, 1907.

THE NEEDS OF LONDON MEDICAL STUDENTS.

To the Editors of THE LANCET.

SIRS,—Those who suggest, as do your correspondents last week, that the Conjoint Board should obtain powers to confer an M.D. degree are probably unaware of the strenuous effort to secure this that was made by Sir William Jenner 25 years ago. He felt very strongly the injustice to London medical students, and when President of the Royal College of Physicians brought before the College a definite proposal that an attempt should be made to give the degree to its Licentiates. But a very large proportion of the Fellows would not hear of the proposal. There are no indications that a similar attempt would have any better chance of success now than then. The long effort subsequently made by Dr. F. J. Smith and others was apparently given up in despair, and the defect continues without prospect of removal. The degree of the injustice, indeed, becomes greater as the provincial universities multiply. One reason probably is that no plan of remedy has been decided on, and a concentrated effort made to secure it.

It matters little by what means the end is attained, but it matters much that vague complaints should give place to a definite effort. The line which seems to offer least resistance should be chosen. No body at present has the power to confer a degree except the University of London. An alternative to the plan I suggested is that the Conjoint diploma should be accepted as the equivalent of the M.B. Desirable

as this would be, I fear the objections would prove insuperable, even if the Colleges abolished their preliminary examination and compelled every student to pass the matriculation of the University. If a plan could be decided on, a petition for it, largely signed by holders of the Conjoint diploma and presented to the authority concerned, would at least bring the matter to a definite issue. This matter seems to me to be of far greater real importance to the medical profession than that of the science school at South Kensington of which we hear so much.

I am, Sirs, yours faithfully,

Nov. 18th, 1907. WILLIAM R. GOWERS.

To the Editors of THE LANCET.

SIRS,—The correspondence on this subject interests me very much. That we are not allowed to call ourselves "doctors" though we are medical men is bad enough, but to me the most annoying and unjust part of it all is that although Conjoint men are more sought after than others for resident posts in most hospitals, when an assistant physician (or surgeon) is wanted on the staff they are not eligible, or, in other words, are not good enough. We might very truly be dubbed the servants of the medical profession. Take my own case. Too late in my student days I discovered that I preferred medicine to surgery, &c., obtained the prize in medicine for my year, and as the result of a competitive examination became house physician to my hospital. There is not a single hospital in the United Kingdom to-day where I should be eligible as a candidate for the post of assistant physician; it would be a walk over for the youngest M.B. from the latest University. That medical men allow their sons to go in for a qualification which is of so limited a value astonishes me. Why do we not act as other bodies would and boycott the Colleges? One wonders when a Mr. Bell and a Mr. Lloyd George will arise and do something for us. The University of Durham is our one and only salvation and I suppose the Conjoint men ought really to be very proud that they, at all events, are not considered too old at 40 (for examinations).

I am, Sirs, yours faithfully,

M.R.C.S., L.R.C.P., F.R.C.S.E., M.D. Brux., L.S.A.

Nov. 18th, 1907.

THE TREATMENT OF CHRONIC PROGRESSIVE DEAFNESS BY OPERATION.

To the Editors of THE LANCET.

SIRS,—The considerable improvement in hearing that often followed my removal of the membrana tympani and the malleus for suppurative disease led me some years ago to consider whether some relief might not be afforded in extreme cases of catarrhal or sclerotic deafness by such removal, followed by stimulating or alternative treatment of the middle ear. The great opposition to any form of intrameatal operations that had been manifested by some leading surgeons and otologists, which I am sure was very mistaken, was probably the reason why myringectomy for catarrhal deafness has not had anything like a thorough trial in England. The debate at Oxford on the treatment of non-suppurative disease of the middle ear showed that hardly one of the many otologists present had much personal experience of this particular method of treatment.

Now the striking feature of this discussion was the very pessimistic tone of almost every speaker. Dr. Urban Pritchard said: "In the advanced stages of chronic catarrh the aural surgeon can do very little." Dr. Thomas Barr said: "In regard to operations on the tympanum there is remarkable diversity of opinion," and proceeded to give the results of Mr. A. H. Cheatle's investigation as to the views held on this subject by leading aurists and "otologists of this country were for the most part distinctly unfavourable to these operations, only a few expressed a mild and restricted approval. The American aurists were much warmer, some almost enthusiastic in their advocacy of these operations," and "continental authorities expressed for the most part a cautious approval." Dr. Barr went on to say: "That an artificial perforation with the galvanic cautery may in some cases improve the hearing or relieve tinnitus, at least temporarily, has been my own experience, as well as that of others, and if such an opening could be rendered permanent, a *desideratum still unsatisfied*, there is here a distinct possibility of doing good." Dr. W. Milligan regretted that Dr. Pritchard took so pessimistic a view of operations. "Though he, the speaker, could not give any definite statistics of operations he believed there was a future for them, as he had seen results that had not been obtained by a previous trial of other methods." Dr. C. H. Fagge did not think infection from the meatus probable after incision of the membrane. Mr. A. J. Brady of Australia had removed the membrane and ossicles, with great improvement in the hearing, although the operation was not done for such purpose.

The discussion at Exeter showed that aurists are, some of them at all events, now inclined to reconsider their former opposition to intrameatal operations and though Dr. Milligan and Dr. G. W. Hill in their reference to my work said little about the favourable results I have obtained (some of which are already published) by intrameatal operation in suppurative disease the fact remains that I have by such means secured the best possible results in some hundreds of cases. The position in catarrhal deafness is different but I still think there is some hope that we may yet do more than has yet been achieved for the relief of extreme cases. I have only operated in 12 cases, all of which had been under skilled treatment previously without any relief. I have not found any great difficulty in keeping a permanent opening, though a secondary operation may be necessary. This, Dr. Barr's desideratum mentioned above, I think my experience in suppurative disease has taught me how to obtain. Unfortunately, some patients are not very patient; in some of the cases given below I may say that I think better results might have been obtained if more time had been allowed for the treatment.

CASE 1.—A female, aged 35 years, had been under various treatment by aurists for extreme deafness. This was severe in both ears and had been almost absolute in the left ear for many years. The tuning fork could be heard behind the left ear but not at the meatus. This ear could not distinguish the voice or the watch. On Sept. 9th, 1904, I removed the left membrane and malleus. Irrigation was carried out daily for three weeks, after which the patient went home. On Oct. 15th she wrote: "My hearing has improved so much I can understand what is said by anyone six feet away without much raising of the voice." I saw this lady in January, 1907, when she said the improvement had continued, as she could now sometimes hear a sermon in church. The right ear has meanwhile become totally deaf.

CASE 2.—A female, aged 17 years, said she had always been deaf but was getting worse. She had been under treatment for long periods. Left ear: could not hear watch or tuning fork at the meatus. I removed the left membrane and malleus on Oct. 15th, 1904. There was no trouble after the operation, and when she left on Nov. 21st she could hear my watch more than a foot from the ear. I have not seen her since.

CASE 3.—A female, aged 17 years, had been deaf for three years. There had been no discharge or pain. She had been under treatment by politzeration. The left ear could not hear watch at meatus, membrane indrawn and thickened. On Nov. 3rd, 1904, I removed the left membrane and ossicles, the stapes also coming away. There was extensive disease in the walls of the middle ear, dry caries, the ossicles also being affected. To my surprise the hearing greatly improved, so that the watch could be heard several inches from the ear. I have not seen her since.

CASE 4.—A female, aged 30 years, was so deaf that one could only communicate with her by writing. She heard tuning fork on the bone but not at either meatus. She had been under various treatments. On Nov. 21st, 1904, I operated on the left ear and on Dec. 15th she could hear what I said to her "quite plainly." In May, 1905, I operated on the right ear. In this case sclerotic changes were far advanced in both ears, the bone having scarcely any covering. I have kept in close touch with this patient and saw her this week. On the whole, her hearing is improved but varies very much. She sometimes hears conversation without difficulty, and with a trumpet she can always understand one. She can hear the fork at the meatus and generally the watch.

CASE 5.—A female, aged 28 years, had been under various treatments for post-influenzal deafness. With the right ear she could just hear a watch pressed on the meatal orifice. In November, 1904, I operated. In December the watch could be heard one inch from the meatus, and in the summer of 1905 the distance at which it was audible had increased to two inches. But there was no very definite general improvement in the hearing as regards conversation. I have no later notes of the case.

CASE 6.—A female, aged 27 years, had been under various treatment for increasing deafness. She said she had come to me as she had been told by an aurist that she would probably lose what little hearing she had. On Nov. 6th, 1905, she could not hear a watch pressed on the right ear but could hear the fork. I operated on Nov. 7th. On Nov. 18th she could hear watch at one inch, and on Nov. 29th at nine inches from the meatus. As this lady lived at a distance I could only see her occasionally after November and in the summer of 1906 I found much of the improvement had gone, owing, I think, to a regrowth of membranous tissues. I advised their removal but this has not been done.

CASE 7.—A man, aged 31 years, had been under various treatment for increasing deafness. When seen by me in November, 1905, he could not hear watch pressed on meatus but could hear the tuning fork. I operated the next day, revealing a condition of advanced sclerosis. On Dec. 2nd he could hear the watch at three inches. This patient could not give me more than a fortnight and I have since heard that he does not think he hears any better than before the operation.

CASE 8.—A female, aged 27 years, had suffered from chronic progressive deafness for many years and had been several times under

treatment. She could not hear watch or tuning fork at left meatus. I operated on Feb. 7th, 1906; tissues sclerosed; hardly any bleeding. On Feb. 17th she could hear both watch and tuning fork at meatus, and a week later could hear the watch half an inch from the ear. I have not seen this patient since, as she lives far away, but I have not heard of any further improvement.

CASE 9.—A male, aged 49 years, had been suffering from increasing deafness for a long time in spite of treatment. He could not hear a watch pressed on the left ear. I operated on April 12th, 1906. This patient wore my intra-tympanic tube for a whole week without knowing there was anything in the ear and had absolutely no pain while with me. On May 14th he wrote: "Something has been attained by the operation; last night I could hear the watch at three inches, which could not be heard before on contact." I have not heard from him since.

CASE 10.—A man, aged 45 years, a sufferer from increasing deafness for several years in spite of much advice. He could not hear watch or tuning fork at right meatus. On May 14th, 1907, I removed the right membrane and malleus. There were advanced sclerosis and some dry caries of bony walls. Going out in a cold wind a day or two after operation he started earache and as soon as that was better he was off to the continent. When he left he could hear the tuning fork some distance from the ear but has written lately to say he does not hear perceptibly better. I think he may yet improve.

CASE 11.—A female, aged 50 years, an extreme case of old catarrhal deafness who had been under the care of several specialists. She could not hear anything with the left ear but said she heard the tuning fork on the bone. I removed the left membrane on June 5th, 1907. This case was complicated by the fact that during the first week I was suffering with a sore-throat and I think my patient caught the infection. The ear became painful, the temperature rose to over 100° F., and there was a rather profuse discharge. I noted, however, on June 17th that she could hear tuning fork at meatus and words spoken in a low voice close to the ear. The ear remained tender for several days and there was still some discharge when she left on July 2nd. It had never been offensive. I last heard in August, "I am pleased to tell you my ear is quite healed. I can hear a little in it—a clock, for instance."

CASE 12.—A female, aged 31 years, suffered from increasing deafness for 19 years and lately from intolerable noises. The left ear is the worst of the two. She cannot hear the watch in contact. I operated on the left ear on Oct. 23rd. My note on the 30th was as follows: "Patient has had no pain since the operation; the noises have ceased in the left ear. She can hear the watch at over an inch from meatus."

I am, Sirs, yours faithfully,

Nov. 18th, 1907. F. FAULDER WHITE.

THE INCISOR TEETH OF THE PITCAIRN ISLANDERS.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of April 4th, 1903, you were good enough to publish some interesting communications on the subject of the peculiar defect of the incisor teeth noticed in most of the Pitcairn Islanders. Mr. C. S. Tomes assisted me in drawing up a series of questions to be answered by the medical officer of His Majesty's ship that made the usual triennial visit to that island. I have just received a further report from the Admiralty, which may interest your readers. But so far no elucidation has been thrown upon the probable causes of this peculiar defect in the incisor teeth.

Mr. Tomes writes me concerning this recent report:—

I wonder if they suck any acid fruits with their front teeth. I remember a case of extreme hysteria in which the patient sucked lemons all day and took little else for a time, in which there was very marked thinning of the enamel of all the front teeth; it was almost gone but there was no caries. If, as the islanders appear to think, the loss of the teeth is a comparatively new thing of more or less sudden origin (*vide* the tooth-brush theory) it hardly looks like an inherited degeneration. On the other hand, one knows how ready even educated people are to find a cause, by no means always a *vera causa*, for their ailments, and one cannot quite trust the statement that their loss of teeth is a new thing without more evidence.

Admiralty report by Staff-Surgeon Lobb, H.M.S. *Torch*:—

The teeth are uniformly very bad; a few have perfect sets but the majority are badly deficient. Both sexes are affected, possibly equally. It seems more pronounced among the women, though this may be due to the fact that in the men the moustache partly conceals the mouth. The incisors are mostly attacked and those of the upper jaw more than those of the lower. Sometimes the two central incisors, sometimes the two lateral, and sometimes the whole four are wanting. The canines are mostly present but often rounded off, giving to many of even the young women a "toothless hag" appearance. Although the incisors only have so far been mentioned owing to their being the most striking, the other teeth may or may not be decayed or absent. In many examined the remaining teeth were perfectly sound; in others practically all the teeth were decayed or absent. The enamel of all the teeth appeared thin and delicate. In one case in which only the two upper lateral incisors were missing from an otherwise perfect though delicate set the loss was attributed to the practice of husking cocoanuts. Possibly a few other cases may be of similar origin but the universal prevalence precludes the possibility of this being the general cause, nor is this idea entertained by themselves. Local opinion throws the blame on missionaries for introducing brushing the teeth, before which the islanders state that they had very good teeth. Others, again, consider the food of the Seventh Day Adventists, consisting as it does chiefly of soft material with a minimum of meat responsible, whilst yet others attribute the wedging of fibres and seeds of fruit between the teeth as the cause. Both these factors are at work in other islands where the diet is similar and yet the teeth are uniformly good—at any rate, away from towns.

Judging from the delicacy of the enamel noticed it is possible that some of the salts necessary for its building up are absent from the soil of the island or, more probable still, that some solvent is present either in the soil or water. Time did not permit of any investigation in this direction and a solution of this peculiarity does not present itself.

From the foregoing it is evident that there is still an absence of any reasonable hypothesis explaining the cause of the condition.

I am, Sirs, yours faithfully,

J. KINGSTON BARTON, M.R.C.P. Lond.

Ashburn-place, London, S.W., Nov. 18th, 1907.

A FORM OF GRAVES'S DISEASE AND ITS TREATMENT.

To the Editors of THE LANCET.

SIRS,—During the short time I have been house officer at the Royal Victoria Hospital, Bournemouth, I have been much struck by the large number of cases of exophthalmic goitre attending here. Owing to the kindness of Mr. W. H. L. Marriner, the visiting surgeon of the nose, throat, and ear department, I have been able to obtain full particulars of the cases which I have examined.

The cases are practically all in young women, the ages ranging from 13 to 35 years. The patients are nearly all drawn from one particular district near Bournemouth and the majority of them have the same water-supply. The patients come to the hospital complaining of a tired aching feeling in the throat, combined with arterial throbbing and profuse perspirations, and also some pricking pain in the eyes. On examination they are all thin, anæmic women, with a history of long-continued worry in a good many instances. Exophthalmos is present in some cases, but is by no means the rule. Functional disturbance of the vascular system is always present. Tachycardia is well marked, the pulse averaging about 130 per minute, and most cases give a systolic bruit over the apex. General enlargement of the thyroid gland is well developed and the vessels are usually seen to be dilated. Tremor is well seen, being usually about ten to the second.

A curious factor in the treatment is that the cases usually recover after a few months, and the treatment carried out is a course of thymus extract given in tabloids, five grains, three times daily, combined with as much rest as possible and attention to general hygiene. I studied the subject of Graves's disease very carefully under Dr. Hector Mackenzie, and the cases I have seen here do not entirely resemble the form which one is accustomed to see in a London hospital. With regard to treatment, it is the first time I have seen any improvement from the use of thymus extract in this disease.

I am, Sirs, yours faithfully,

HENRY GRANGER, M.R.C.S. Eng.,
Resident Medical Officer, Royal Victoria Hospital.

Bournemouth, Nov. 16th, 1907.

OPERATOR OR SURGEON?

To the Editors of THE LANCET.

SIRS,—The laity, and in not a few instances medical men, regard a surgeon as a man who has learnt to use his fingers, totally ignoring that exercise of reasoning power which ought to be a prelude to every operation. Mechanical dexterity, unless safeguarded by sound judgment based on common sense, results only in wholesale operating, in which the interests of the patient are liable to play quite a minor part. It is the custom of certain operators to remove the healthy vermiform appendix, whenever met with in the course of a cœliotomy, apparently in order to free the patient from risk of appendicitis. It is not obvious why such operative zeal should be limited to the appendix when so many other viscera are equally near at hand, can be removed with equal ease, and are equally healthy. If the practice of removing healthy organs and tissues because there exists a bare possibility, if not removed, they may at some future date be the seat of inflammation becomes general, the only reservation being that the patient must usually survive the operation and be apparently undamaged in general health, there will be very little of the healthy human body which can hope to escape the attentions of the operator.

A patient in a state of collapse caused by recent injury is an unfit subject for operations, such as amputations of mangled limbs. This is especially the case if his vitality has been still further reduced by acting on the advice of someone who, in the language of the daily press, "ordered his

immediate removal to hospital," which is too often a euphemism for carrying a considerable distance a person who is already half dead. In such a patient bleeding is almost the only condition which calls for immediate operation and the minimum of operating sufficient to arrest the hæmorrhage is all that is justifiable. An innocent tumour, producing neither disability nor deformity, is, as a rule, best left alone. The presence of such a tumour does not of itself justify operation. Undue mobility of the kidney is a common condition. The possessor of such an organ is described as "suffering" from a loose kidney. In the majority of cases the patient does not "suffer" in the least and is often totally unaware that he (or more often she) has a loose kidney.

Of the minority of cases of undue mobility of the kidney, in which such mobility may reasonably be regarded as the cause of the symptoms, these symptoms can be relieved by some form of belt or pad and it is only in those cases in which the loose kidney produces symptoms which are not relieved by a belt or pad that the question of fixing the kidney by operation should be considered. Adenoid tissue in the naso-pharynx, tonsil, or elsewhere, even if present in excess of what any given operator may consider normal, if producing neither symptoms nor deformity, should be left alone. The operator is apt to adopt a hard-and-fast standard of what constitutes a normal body and to regard the slightest deviation from this as a call to operate. He totally overlooks the fact that wide deviations from a rigid standard of normality are perfectly compatible with permanent good health. "I did not wish to operate but the patient or his friends *insisted* on having something done" is an excuse sometimes put forward. It is the surgeon, not the patient or his friends, who is in a position to form a correct opinion for or against the advisability of an operation. An inadvisable operation cannot be made advisable by the ignorant clamourings of the patient or his friends, and in these cases it is the duty of the surgeon literally to "save the patient from his friends" by declining to operate.

Surgical literature contains few records of the cases in which the surgeon has declined to operate, but in estimating true surgical ability, of which manual dexterity, important though it be, is but a part, stress should be laid not only on the operative cures but also on those cases in which in the interests of the patient the surgeon has refrained from operating.

I am, Sirs, yours faithfully,

Plymouth, Nov. 9th, 1907. C. HAMILTON WHITEFORD.

DRAINAGE OF THE UTERUS IN PUERPERAL SAPRÆMIA.

To the Editors of THE LANCET.

SIRS,—The treatment of such cases as the one reported in THE LANCET of Nov. 16th and commented upon in your editorial article is worthy of special consideration. Dr. A. A. Warden's case was evidently one of puerperal sapræmia or local infection, the symptoms being due to the absorption of toxic chemical products of bacterial action on the disintegrating uterine contents. If the manipulations required to remove the decomposing contents lead to a fresh abrasion further rapid absorption takes place, and in from 20 to 60 minutes a more or less serious rigor occurs, followed by a fall of the temperature to normal.

Such a serious complication as a rigor may usually be avoided if, when the patient is anæsthetised and before any uterine examination is made, a Budin's tube is very gently passed into the uterus, with iodised water (tr. iodi dr. ii. ad Oi) kept running during its insertion. After completely emptying the uterus another iodised douche should be given. A ball of gauze should then be carried up into the uterus and the lining membrane be well scrubbed, and it will be found that a large quantity of decidual débris will come away if another douche is given. This should be followed by the application of liq. iodi (or better still of a 1 in 4 solution of iodine) to complete the operation, though it is a good plan to pack the uterus lightly with a gauze drain for 24 hours. The iodine freely permeates the mucosa and prevents any further decomposition. In my opinion the uterus should never be curetted with a sharp curette during the ten days following labour in any infective case, for fear of interfering with the protective leucocyte sheet round the infected zone. Should the temperature rise again it has been my custom to take a piece of rubber drainage tube of suitable length and size, double it on itself at its centre, cut off the outside angle at the point of flexion so that the tube becomes practically two tubes united at one end by a rubber flange, pass the united end into the uterus more than half way up, leaving the free ends of the tube projecting from the vulva to be there secured. This double tube serves as a channel for drainage and for subsequent douching. In cases of persistent temperature following such treatment, pointing to deeper local or to some general infection, I have found liq. ferri perchlor. in doses of 20 or 30 minims every three or four hours the most reliable treatment. In true septicæmia, of course, other measures are also needed. I believe that if prompt treatment on these lines were adopted when the first symptoms arise during the puerperium many lives would be saved.

I am, Sirs, yours faithfully,

Manchester-square, W., Nov. 18th, 1907. AMAND ROUTH.

ARMY NURSING CORPS.

To the Editors of THE LANCET.

SIRS,—I should like to solicit your interest in the army nursing service and more particularly in the question of the rejection of candidates offering their services. The matter comes up in this manner: Two nurses from the Cumberland Infirmary, trained, qualified, and medically fit, were last summer rejected by the War Office without being even looked at. I am told, but do not care to believe it, that only ladies by birth and education, or daughters of army officers are eligible for appointment.

The first qualification relating to education and parentage I cannot discuss, because there would be no standard by which such a test could be applied. With regard to the second statement that the appointments are reserved for daughters of officers in the army, if this is a qualification, surely it would be right to make a statement of it on the application forms in order to prevent useless applications for service in the Army Nursing Corps. Had the two nurses from this city been seen, examined, and pronounced unfit for service, I should not have troubled you this much; but seeing that they were put to some trouble in filling up papers and getting other vouchers required it seems that they have been somewhat cruelly treated. No doubt there is some reason behind the whole matter which has not up to now been penetrated, but the injustice, if it be so, cannot be allowed to remain in its present unsatisfactory position.

I am, Sirs, yours faithfully,

Carlisle, Nov. 13th, 1907. H. A. LEDIARD.

DISEASES OF TWINS.

To the Editors of THE LANCET.

SIRS,—Will you kindly permit me to make use of the columns of your journal in the following circumstances.

On re-reading Francis Galton's "History of Twins," published in his work "Inquiries into Human Faculty," it occurred to me that, as he has proved the greater strength of nature over nurture in this investigation, the same material slightly modified would be able conclusively to establish the relative importance of the factors of individual constitution and specific invading organisms in the production of disease. Accordingly I had as a beginning 200 circulars and addressed return-envelopes printed and subsequently despatched a little over 50 of them to test the kind of response I was likely to meet with. I had replies from over 40 per cent., and although I took the precaution of sending only to general practitioners of more than ten years' standing, the evidence obtained was decidedly disappointing.

I had imagined as twin births are said to occur once in about every 90 maternity cases that most practitioners who had been in practice for a few years would have had some experience on this subject, even allowing for the fact that twin children frequently die. To my surprise no less than 45 per cent. of my replies stated that no experience had so far been obtained, 8 to 10 per cent. apparently do not practise midwifery, or discourage it, and have not attended twins at any later age period, and only 45 per cent. have had any experience however meagre. Of these most appear to have had a few maternity cases though the answers are not always clear on this point; in addition, 25 per cent. have once attended twin children and 30 per cent. once adults. I am not quite certain whether one of these latter did not attend adult twins twice.

The number of replies is, of course, far too small to make

any generalisation upon the matter. A practitioner may possibly be unaware that he is treating a twin when the pair are separated. Still, allowing for this the scarcity of material is remarkable. The explanation may possibly be due to an error in assuming that hospital statistics drawn from the poorest citizens apply equally to all classes. In any case, it is evident that I must appeal to a much larger circle of medical men than can be done by any method of private correspondence in order to obtain the necessary information. Would any of your readers, therefore, who have in their possession evidence on the points mentioned below kindly communicate with the writer whose address is appended?

Twins, if they are true twins, are usually of the same sex, and are most frequently either much alike or much unlike. 1. Of like twins of the same sex at any age period, have you any medical experience of their suffering simultaneously or independently from like or unlike diseases in like or unlike (separate) surroundings? 2. Of unlike twins of the same sex at any age period, have you any medical experience of their suffering simultaneously or independently from like or unlike diseases in like or unlike (separate) surroundings?

Please name specifically all diseases referred to, as this point is very important. Any additional information on the subject would be welcomed and all remarks will, of course, be treated confidentially. I would be greatly obliged if continental journals would insert this letter in their issues. Thanking you and your readers in anticipation for your kindness in considering my letter,

I am, Sirs, yours faithfully,

J. LIONEL TAYLER.

8, Adys Lawn, St. Paul's-avenue, Willesden Green, London, N.W., Nov. 18th, 1907.

FOREIGN BODIES IN THE BRONCHI.

To the Editors of THE LANCET.

SIRS,—I have read in THE LANCET of to-day with the very greatest interest Mr. H. S. Clogg's account of a foreign body in the left bronchus of a young child, for it brings vividly to my recollection a similar case which happened in my experience more than 50 years ago. I will not call it practice, for I was only a medical student then, doing duty in the Royal Public Dispensary of Edinburgh. An urgent message came in one afternoon that a little girl was choking; with all speed I went to her but found on arrival that the child was breathing easily to all appearance. I learnt, however, that the child had been playing with plum-stones, putting them into her mouth, when the sudden fit of choking came on. I listened therefore over both sides of the chest. I found little or no breathing on the right side and something more than a respiratory murmur on the left. I lost no time in calling in the nearest medical practitioner who administered an emetic, without in any way altering the breathing conditions. I then proceeded to Professor Spence, whom I was at that time assisting in his wards in the Edinburgh Infirmary, and on expressing to him the opinion that the plum-stone was lodged in the right bronchus of the child he came and saw her and directed her removal to the infirmary.

On the following day a consultation was held at which there were differences of opinion, when that man of decision and abruptness, Syme, came on the scene, heard the story, looked at the child, and without the utterance of another word said "Operate," turned on his heel and left. The trachea was opened, whereupon the plum-stone was promptly and forcibly ejected through the opening. I believe the case is recorded in the writings of Syme or Spence but probably its history has not previously been so fully given.

I am, Sirs, yours faithfully,

Harley-street, W., Nov. 16th, 1907. JAMES ADAM.

THE LONDON PROVIDENT DISPENSARIES COUNCIL.

To the Editors of THE LANCET.

SIRS,—Referring to the letter from the chairman of the London Provident Dispensaries Council in your issue of Oct. 26th it appears to me, an East End practitioner, that what is required is not the establishment of more provident dispensaries but the stricter supervision of the out-patient departments of our hospitals, so that they can devote themselves to the needs of the necessitous poor. Surely there are enough "clubs" which for a ridiculously small weekly subscription provide medical treatment for the wage-earners who are unable to pay the ordinary medical fees—even the small ones that myself and other practitioners in poor neighbourhoods charge. By the establishment over the whole area of London of more dispensaries the poor general practitioner will have to meet further unfair competition; he has already the out-patient departments of hospitals to compete with, where the patients do not necessarily get *better* attention but *free*. Even in the poorest districts of London innumerable public-houses flourish and do a large trade. It is evident that the wage-earners have the money to spend in drink, but when needing medical attention they get it free at the hospitals, where but feeble attempts are made to ascertain if the applicant is a fit subject for gratuitous relief.

I assume the new dispensaries it is proposed to establish will fix their membership fee at such a figure as will effectually undercut the general practitioner, even if he charges only 4*d.* for advice and medicine. I think the profession should view with suspicion the establishment of more institutions for dispensing almost free medical attention. It may seem a matter only affecting a limited number of our profession, but it has, I venture to think, farther-reaching effects.

I am, Sirs, yours faithfully,

Nov. 16th, 1907. AN EAST-END PRACTITIONER.

*** Our correspondent is, we think, needlessly alarmed about an extension of the dispensary system. The provident dispensaries should be the means of preventing hospital abuse, especially at the out-patient departments. If the out-patient departments of hospitals were used in a consultative capacity by dispensaries a definite chain between the practice of the hospital and that of the general practitioner would be established. Those who could not pay a fee might avail themselves of the coöperative principle to join a dispensary and relieve the general practitioner of unremunerative patients, and of these cases only those presenting real difficulty of diagnosis or treatment would be sent on to the hospitals. The hospitals might have other patients, but they might well give priority to cases already hall-marked for them as suitable both on pecuniary and scientific grounds.—ED. L.

DAKHYL *v.* LABOUCHERE.

To the Editors of THE LANCET.

SIRS,—Sir William Lawrence in his lectures on surgery was accustomed to deal very briefly with diseases of the ear. "Gentlemen," he said, "there are two kinds of deafness—the kind that is curable by syringing and the kind that is not curable at all. The former falls within the province of the surgeon, the latter within that of the aurist." In Sir William Lawrence's days we may take it that "aurist" was equivalent to "quack." In our own time we have seen an amount of progress in relation to the diseases of the ear and the defects of hearing which is not only great in itself but also such as to afford much encouragement for the future; and the aural department now attached to every great hospital cannot fail to bring the improved conditions to the knowledge of the public. In the meanwhile, however, ear quacks abound, and the extent and profusion of their advertisements indicate that their dupes must be numerous and their profits enormous. An amusing list of these persons is furnished by a well-conducted little magazine, the *Albion*, which is addressed especially to the deaf; and in the November number we find quite an interesting account of the "Nicholson Institute," of "Professor" Keith-Harvey, of "Mr. Herbert Clifton," of the "Aerial Medication Institute," and of the "Murray Ear Drum." We are told that the "Drouet Institute" itself owed its formation to a person who calls himself Nicholson, and the plans and methods of these persons are described. They all advertise largely, I believe. We know that Vespasian declared that the money in his pocket did not smell of the *cloacæ* whence it was derived but is a similar contention quite worthy of the presumably moral and enlightened "Press" of the twentieth century? The proprietors of the papers which insert these advertisements must be perfectly well aware that the advertisers are mostly of the lowest depths of ignorance; that their claims are false, their wares worthless, and their charges extortionate; and they must also know that the poor, who

are the people chiefly plundered, do not in the least understand the absence of responsibility for the statements of advertisers to which the proprietors lay claim. The readers in innumerable cases accept the advertisements on the credit of the paper in which they appear. The proprietors should also be well aware that neglected or maltreated ear disease is highly dangerous to life by reason of not infrequent extension to the brain, and on all grounds they may reasonably be called upon to withdraw from their present complicity in quackery. I am, Sirs, yours faithfully,

Nov. 18th, 1907. F.R.C.S.

CHANCRE OF THE CERVIX.

To the Editors of THE LANCET.

SIRS,—I have read with interest Mr. George Pernet's letter criticising the statement in your review[1] of Dr. F. J. McCann's "Cancer of the Womb" that a syphilitic chancre rarely occurs on the cervix uteri. Mr. Pernet maintains that this is not so and quotes some statistics from Fournier's "Syphilis chez la Femme" in support of his contention. It appears to me, however, that these figures, if they prove anything, rather tend to prove that a chancre in this position is a rare affection, for if Fournier with his vast experience of syphilitic lesions can only refer to 13 cases of chancre on the cervix surely it must be of very infrequent occurrence. In my own experience of some 16,000 gynæcological cases, mainly out-patients, the very class in which syphilis is most common, I have only once seen a chancre on the cervix. Dr. G. E. Herman states in his book on "Diseases of Women" that he has seen one case. Dr. T. S. Cullen in discussing the diagnosis of carcinoma of the cervix in his work on "Cancer of the Uterus," says that he has never seen a case, and Professor Pozzi in his "Treatise on Gynæcology" does not even mention the condition. Glück in a paper in the *Wiener Medizinische Presse* (1881) states that a chancre on the cervix occurs not more frequently than one on the vaginal walls, and Fournier himself draws special attention to its extreme rarity in this latter position. No doubt if the systematic examination of prostitutes was carried out in this country as it is abroad a chancre on the cervix would be found not infrequently in this class of woman, but amongst gynæcological patients at any rate all the evidence goes to show that it is a rare affection and therefore of but little clinical importance in the diagnosis of cancer of the cervix uteri. Once only have I seen a case in which doubt existed as to whether an ulcer on the cervix was a chancre or a carcinoma and in this instance microscopic examination of a portion of the growth proved it to be cancerous.—I am, Sirs, yours faithfully,

Nov. 16th, 1907. THE WRITER OF THE REVIEW.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Smoke Abatement.

AN important meeting was held in Manchester a week ago, called by the conference of societies and institutions engaged in social service and the Manchester and Salford Sanitary Association, to consider the smoke problem. About 50 societies had been invited and most of them were represented. The chairman, Mr. J. W. Graham, spoke of "the great public necessity that rested on us of purifying our air," and of the large districts such as South Lancashire, the West Riding of Yorkshire, Tyneside, the Potteries, the South Wales coalfield, the Black Country, and so on, "which were really not permanently fitted for human habitation." The vast increase of production in the nineteenth century had brought about this abnormal condition of our atmosphere, and, he said, it would be the task of the twentieth century to make the life of England suitable for the workers as well as for the work. Mr. Gordon Harvey, M.P., hoped that the magistrates would give strong support to the sanitary committee of the corporation in its efforts to purify the air of the city by imposing fines "sufficiently high to be felt." This is really an important point, for as it is manufacturers frequently prefer to send out black smoke and to pay the insufficient fines inflicted rather than to take the trouble to prevent the nuisance. He would allow less time for the emission of black smoke in both Manchester and Salford, the latter being the greater sinner, and would have highly trained inspectors responsible to the central government, or a combination of local authorities, as is done under the Alkali Acts. He stated that at the factories with which he was connected, where about 200 tons of coal per week were consumed, no smoke was made. He did not mean no "dense" smoke, but *no* smoke. There were many ways of bringing this about. As Mr. Harvey dealt with manufacturing smoke, so Mr. T. Pridgin Teale, a veteran in the war against smoke, dealt with the question of domestic smoke. As is well known, he has long been interested in the discovery of the most suitable grate for saving coal and avoiding the making of smoke. He said that economic and effective combustion of coal in house fires depended on two conditions in combination—one, that little or no current of air should pass through the grid at the bottom of the fire; the other, that the space or chamber under the fire should be kept hot. Other details were given, and if all our grates were made on the principles which Mr. Teale advocated we should save coal and have a much clearer sky. Mr. Nicholson of Sheffield said that after 15 years' experience he declared emphatically that smoke could be prevented without harassing trade and commerce. A motion embodying the views expressed by Mr. Harvey was carried and also a vote of thanks to the chairman, moved by Mr. S. W. Royse and seconded by Mr. T. C. Horsfall. The former said that the chemical section and the engineering section of the Manchester Chamber of Commerce "had discussed the point as to what could be done to assist those who were wishful to assist themselves." It is to be hoped that the discussion may turn out practically useful, for the chemical industry has acquired rather a bad reputation as manufacturers of black smoke as well as "refined products."

University Grant.

The greatly to be regretted cutting down of the Treasury grant to the University of Manchester by £2000 a year, presumably owing to the poverty-stricken condition of the country, has aroused the sympathy of the Salford education committee. The committee states in a resolution to be sent to the Chancellor of the Exchequer, the University, and the local Members of Parliament, that it has heard of it with "much regret" and all the more as the Commissioners have recognised the "pre-eminent character" of the work done by the University. They feel that the reduction of grant will seriously hamper this work, for it had been organised in the expectation that the grant hitherto paid would be continued and they hope that the question will be reconsidered by the Government. Will the deaf ear be turned to them? The attitude of the Government is of interest too, as before your next issue appears an important deputation, including the Vice-Chancellor (Dr. Hopkinson), the Lord Mayor of Manchester, the Mayor of Salford, and many other influential gentlemen, will lay their views before the Chancellor of the Exchequer in all probability, as owing to the indisposition of the Prime Minister he may not receive it.

Drink and the Death-rate.

The sinister part played by alcoholic excess is too well known to be insisted on, but attention may none the less be called to three inquests held by the Manchester coroner yesterday. One inquest was on a woman, aged 38 years, who drank heavily whenever she had the chance, often taking whisky instead of her breakfast. The next case was that of a man, aged 52 years, a "heavy drinker" for years. He would work for a time and as soon as he had a little money went on a drinking bout. On Friday morning last "he imagined strange things" and died later in the day. The third case was that of a man, 54 years of age, who died suddenly on Saturday morning. He, too, was a heavy drinker for years and for some weeks had been drunk nearly every day. The baleful fascination that alcohol has for a certain proportion of all sorts and conditions of men and women, from the intellectual and refined to the most brutish and ignorant, can be analysed and speculated on much more easily than it can be overcome either by example or precept.

The Treatment of Tuberculous Subjects.

Dr. A. J. Laird, the medical officer of health of Crewe, in a special report to the health committee, makes an interesting suggestion as to the educational treatment of consumptive patients. As all know, the distribution of the tubercle bacillus is favoured by the carelessness, often arising

[1] THE LANCET, Oct. 12th, 1907, p. 1027.

from ignorance, of the unfortunate victims of its inroads. Crewe suffers seriously from consumption and Dr. Laird says that last year it was the cause of 39 deaths—"four times as many as from the other notifiable diseases together." This points to a large number of patients. So far the Cheshire county council has no county sanatorium, and Dr. Laird suggests that to obtain full benefit from the plan of voluntary notification the Crewe health authority should offer help to such consumptives as were willing by removing them to the isolation hospital and educating them to appreciate the value of fresh air, and also, what is most important, how to prevent them from being a source of danger to relatives and fellow workmen, and at the same time how to utilise their homes to the best advantage. In this way Dr. Laird thinks that patients so trained would be health missionaries and educate many directly and indirectly. Certainly one important point in the prevention of consumption is to help patients to understand how and why they are dangerous to the community, and that it is a duty owing to others that they should do all they can to minimise the danger.

Nov. 19th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Lessening of Infantile Mortality in Huddersfield.

MENTION has already been made in this column (March 3rd, 1906) of the success that has attended the movement initiated by Alderman Broadbent. It will be remembered that Alderman Broadbent pledged himself to give the parents of every child born within a certain area the sum of £1 when the infant should attain the age of 12 months. From this small beginning, which, however, in itself demonstrated that much could be done, a definite crusade has been inaugurated in Huddersfield, and it is said with the happiest results. A special Act of Parliament was obtained in 1906, making the notification of all births within 48 hours to the medical officer of health compulsory, and it is interesting to learn on the authority of Alderman Broadbent and Dr. S. G. Moore, the medical officer of health, that the Act has been carried out without friction and that notification within the time limit of 48 hours has been made in 94 per cent. of the total births. Working under the medical officer of health there are two assistants, both of whom are ladies with medical qualifications, who devote almost the whole of their time to questions relating to infantile mortality. These officers visit the homes, advise, and help. A voluntary association, the Huddersfield and District Public Health Union, which is worked by about 100 ladies, receives notifications from the public health department every week and under a scheme of division of the town into districts undertakes the visiting of the homes. If the baby does not thrive *and is not under medical care* the case is referred to the medical officer of health and appropriate action is taken. Great care has been taken both by the public health authorities and by the voluntary association not in any way to make their services obtrusive and always to make it clear that it is fully within the right of anyone to decline the services and advice which are offered to them.

The Leeds Post-Graduate Course at the Leeds Public Dispensary.

The promoters of this course of instruction have decided, in consequence of the success which has already attended their efforts, to increase the scope of their labours. It will be remembered that the course was inaugurated by Mr. Jonathan Hutchinson who delivered an address on April 30th, 1906, and that a course of lecture demonstrations was held during the summer term. During the summer term of the present year a second course was given and Dr. James Mackenzie of Burnley gave the opening address. The demand having arisen, the committee acceded to the request that a third course should be given and this, which has been fully attended, is now approaching its completion. The original committee, consisting of Dr. T. Wardrop Griffith, Dr. E. F. Trevelyan, Dr. W. H. M Telling, Dr. G. W. Watson, Mr. D. Seaton, Mr. A. Sharp, and Mr. M. A. Teale (who has acted throughout as honorary secretary), has coöpted Mr. B. G. A. Moynihan and Mr. J. F. Dobson and has formed itself into a permanent committee for the conducting of the course in the future. The following scheme has been considered and adopted for 1908:—1. A lecture demonstration course of about 16 to 18 meetings will be held as in former years during the summer term May to July. This will be carried out on the same lines as the preceding three courses in which the meetings were in most cases devoted to the consideration and illustration of special groups of cases. 2. Two courses of clinical demonstrations of miscellaneous cases of disease will be held once a week during the two winter terms January to March and October to December. Here no attempt will be made to illustrate special groups of cases. 3. A series of short lecture courses, each consisting of four to six meetings, will be arranged for. The number of these will depend on the demand for them and it would be possible to have four such courses during the term of three months by arranging that two of the courses should run concurrently. The titles of the courses already arranged for are as follows, viz.: Organic Nervous Diseases; the Development, Structure, and Functions of the Heart in Relation to its Anomalies and Diseases; Rheumatism and Allied Affections of Childhood; Laryngology; The Ophthalmoscopic Examination of Diseases of the Eye; Diseases of the Male Urinary Organs; and On Anæsthetics and their Administration.

The Royal Sanitary Institute.

A provincial sessional meeting of this society will be held at Leeds on Friday and Saturday, Nov. 29th and 30th. The meeting on Friday, will be held in the Council Chamber of the Town-hall, at 7.30 P.M., when a discussion will take place on Modern Methods of Sewage Disposal, with Special Reference to the Elimination of Suspended Matters. The discussion will be opened by Mr. G. A. Hart, sewerage engineer, Leeds, who will be followed by, among others, Mr. K. F. Campbell, the borough engineer of Huddersfield; Mr. J. Corbett, the borough engineer of Salford; Dr. G. J. Fowler, D.Sc., the Superintendent of the Manchester Sewage Works; Mr. S. S. Platt, the borough surveyor of Rochdale; and Dr. H. M. Wilson, chief inspector of the West Riding Yorks River Board. General discussion will be invited. On Saturday the members of the institute will inspect the Headingly filter beds and later will visit the city hospitals at Seacroft and Killingbeck.

Nov. 19th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Royal Medical Society.

THE Edinburgh Royal Medical Society commenced its 170th session on Oct. 25th, when Professor C. S. Sherrington delivered the inaugural address, in which he chiefly considered the subject of Inhibition. Going back to the days of Descartes, when still the aeration of the blood was regarded as due to vital humor, he showed how that philosopher and man of science had already formulated the idea of inhibition of muscles. He then spoke of some of the notable men of science of the nineteenth century, in particular the Webers and Bell, who realised that muscles are not only stimulated but also inhibited. Passing on to the proof of his present position he showed several tracings taken by exposing the nerves of the leg in a "spinal" animal, and stimulating nerves or skin. He proved that stimulation of the proximal cut end of the nerve to the hamstrings produced a relaxation of the extensors of the leg, which were before in a state of hypertonus. Stimulation of various points of the skin also produced relaxation in sets of muscles the opposers of whose action would, if not cut, have been stimulated to contraction. The "scratch reflex," which was produced by a continuous slight electric stimulation of the deeper layers of the skin, was then shown to be an alternate stimulation and inhibition of opposing sets of muscles. This also could be inhibited if the attention of the spinal cord, as it were, was called to some other more potent stimulation.—On Nov. 1st Dr. J. D. Comrie read a paper on Cerebro-spinal Meningitis. After describing the pathological and clinical features of the disease he spoke of some original work which he and Dr. W. Elder had carried out on the method of spread of the recent epidemic in Edinburgh. A considerable number of cases in Leith at the beginning of this epidemic were found to be in the families of men at work in the engine-room of a steam vessel which was being repaired in the docks. By exposing Petrie's plates in the engine-room it was found that Still's meningococcus existed in the atmosphere there. This organism was also found in a cultivable form in the nasal cavities of over 50 per cent. of the men working in this engine-room. Dr. Comrie deduced

that the organism could be carried about in the nasal cavities of adults and thus given in virulent form to their children or others with whom they came in contact. With respect to the channel by which the meningococcus gained access to the spinal canal he accepted the view propounded by Dr. Stuart Macdonald, by whom the organism was stated to have been traced along the nerve roots in the dorsal region, probably reaching that position from a lesion in the intestine.—On Nov. 8th Dr. A. C. B. McMurtrie, senior President of the society for the ensuing session, read his presidential address on the History of Medicine.—Dr. M. S. Fraser then read a paper on Foreign Bodies in Surgery, giving special attention to the diagnostic uses of the Roentgen rays in such cases.

Report of Woodilee Asylum.

The annual report of Woodilee Asylum under the Glasgow Lunacy District Board has just been issued. During the year the number of patients under treatment was 1271. Of the 331 patients admitted 177 were men and 154 were women; 47 men and 45 women were discharged recovered and 28 men and 15 women were discharged not recovered. The deaths numbered 123—58 men and 65 women. The increased admission-rate of 71 more than in the previous year was largely due to two circumstances—viz., the large number of idiot children admitted to the asylum from Larbert and Baldovan Institution, and an increase in the number of senile patients. 53 patients, aged 60 years and upwards, were admitted during the past year, as compared with 47 in the previous year. According to Dr. H. C. Marr's statement in the causation of the insanity of the patients admitted hereditary predisposition was traceable in 79 of the cases, while the effect of alcohol in the direct causation was less than it had been for a number of years. The recovery-rate for the year was 27·79 per cent., as compared with 37·9 per cent. in the previous year and this low rate indicates the exceptional nature of the cases admitted during the year. In connexion with treatment, it was found that electrical treatment, especially in combination with baths, had had such advantageous results that electrical baths had been introduced into the hospital divisions of the main asylums. The number of recoveries was still mainly from those admitted directly from their homes and for the first time to the asylum.

Infants' Milk Depôt at Glasgow.

It is now little more than three years ago since the corporation of Glasgow acquired premises at Osborne-street and laid down the necessary plant for the infants' milk depôt. The success of the scheme may be gauged by the fact that though all the milk is still prepared at the central depôt there are now 14 distributive branches throughout the city. Dr. Mary Gallagher, who was lately appointed by the corporation to deal with the question of infantile mortality, regularly visits two of these depôts and gives advice to mothers, and, in addition, at both of these depôts the children are weighed every fortnight for purposes of observation. The method of treating the milk is very thorough. On arrival at the central depôt from the farm it is placed in a large vessel and brought up to natural heat, after which it is passed into a separator to extract all foreign matter. Later the milk is transferred to a mixing tank, where it is made up to three grades or strengths. The first consists of two parts water and one of milk, the second half water and half milk, and the third one part of water to three of milk. To these are added commensurate proportions of sugar, cream, and a little salt. Thus prepared, the milk is passed through a pipe ready for bottling, which is done automatically. When stoppered and ready the bottles, filled with quantities to suit various ages, are placed on a carriage and run into the sterilising chamber where the milk is treated at a temperature of 210° F. According to the season the milk is afterwards cooled and is then ready for sale. Nine feeds are allowed a child per 24 hours, for which the charge is 2*d.*, 2½*d.*, and 3*d.* according to the age of the child and the quantities of the milk. The contents of the bottle constitute one feed, and the bottles are so made that immediately the stopper is withdrawn and the special short teat furnished applied the milk is ready for consumption by the child.

Diseased Pork.

Attention has often been called to imperfections in the present methods of meat inspection, and the advocates of a better system will find justification for their views in some facts recently published in Glasgow. Mr. A. M. Trotter, veterinary surgeon to the corporation of that city, in his report for the year 1906 refers to the unsatisfactory conditions under which some of the pork brought into Glasgow from other parts of Scotland and from Ireland has been prepared for food. For instance, a side of pork ribs, consigned by a ham curer in Ayrshire to a trader in Glasgow, was found to be extensively affected with tuberculosis. This consigner slaughtered about 500 pigs per week and the carcasses cured by him were never examined on his premises. The remainder of the pig from which this side of ribs had been taken was sold for human consumption. During the cross-examination of witnesses in an Irish court of law recently it was elicited that in the country markets in the north of Ireland no attempt was made to discover the existence of either tuberculosis or any other disease. This unsatisfactory state of affairs has been more than once pointed out to the Local Government Board for Scotland and the Secretary for Scotland has been questioned on the subject in the House of Commons, but all efforts to have pork inspected efficiently have proved fruitless.

Dangers of Imported Meat.

The medical officer of health of Glasgow has again drawn attention to one of the dangers in connexion with imported frozen meat. Recently his attention was directed to a consignment of frozen meat arriving in the city from abroad. On examination nothing was discovered suggesting unsoundness in the flesh of the animals at the time of slaughter but the city bacteriologist reported that micro-organisms of the bacillus coli group were present. Two explanations are suggested for their presence. In the first place, immediately after death they may have penetrated the wall of the intestine, their normal habitat, and thus reached those portions contained in the consignment. This, however, from the condition of the meat, seems unlikely, and the more probable explanation is that in dressing the animal for packing due care was not exercised in protecting the surface of the flesh from direct contamination. The practical result is that flesh containing organisms of this character rapidly undergoes decomposition on thawing, and that the presence of intestinal organisms in the flesh is likely to induce those changes therein which experience has shown to be associated with ptomaine poisoning.

Glasgow and District Branch of the National Association for the Prevention of Consumption.

The Lord Provost presided last week at the annual meeting of this branch of the association. In speaking of the work of the association, he referred to the fact that when the population of the city was less than half of what it is now there were 1600 deaths in a year from consumption. For the last year or two the deaths reported amounted to 1200 or 1400. Most of these deaths even were regarded as preventable, and the work of the association was to bring the number down to the lowest possible figure. From the city statistics it was evident that the percentage of deaths in one-apartment houses was exactly double that in three-apartment houses, while it was almost four times as high as that in houses of four or more apartments. One unfortunate feature of the work carried on by the association is that of the cases applying for help in the dispensary instituted by the association so many of the patients are too far advanced in the disease to be helped by the sanatorium treatment. An important part of the work is that carried out by the "after-care" committee which endeavours to arrange suitable employment and regulation of living for the patients after dismissal from the sanatorium. At the sanatorium itself at Bellefield an effort is to be made to erect a new pavilion which will bring the possible accommodation up to 50 beds. This will mean an expenditure of £5000 per annum, as each patient costs over 30*s.* per week. Of this on an average the association recovers 8*s.* per patient, so that, roughly speaking, the association requires an income of £2000 more than it has at present to carry on the work.

Nov. 19th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Belfast Medical Students' Association.

THE first meeting of the Belfast Medical Students' Association for the session 1907–08 was held in the Students' Union of Queen's College on Nov. 11th, when the incoming President, Dr. James M. Warnock, delivered an address on

Science in Medicine, after which Dr. Benjamin Moore, professor of bio-chemistry and Dean of the Medical Faculty in the University of Liverpool, delivered a lecture on Universities, Ancient and Modern, in which he said his solution of the university question in Ireland would be a University of Belfast and a sectarian one for the Roman Catholics in Dublin with divinity schools well outside their walls, and he would make Trinity College reform itself. A vote of thanks followed to the lecturer.

Health of Belfast.

At a meeting of the public health committee held on Nov. 14th it was reported that three cases of typhus fever had occurred, the patients coming from a street where overcrowding and filth seemed to have been the predisposing causes. With reference to the communications from Mr. N. Strauss to the effect that his plant for pasteurising milk only required 12,000 cubic feet with steam connexion, and if this was unprocurable that he would donate boiler with plant, the only nominal expense being the running plant, it was pointed out that the corporation had no legal authority to expend any part of its funds in operating such a plant or acting as retailers of milk, there being no provision in the Public Health Acts empowering it to do so.

The Tuberculosis Exhibition in Belfast.

The Tuberculosis Exhibition is to be opened in the old town hall, Belfast, on Friday, Nov. 22nd, by Sir R. Douglas Powell, President of the Royal College of Physicians of London. The exhibition will remain open for two weeks and during this time lectures will be given each evening by various members of the medical and veterinary professions. The members of the veterinary section are taking the utmost pains to make their department interesting. Among the lecturers will be the President of the Ulster Medical Society (Dr. John McCaw), Sir Robert Matheson, LL.D. (Registrar-General), Professor Mettam, M.R.C.V.S. (President of the Royal College of Veterinary Science), Professor J. A. Lindsay, Dr. W. Calwell, Dr. F. H. Sinclair, Professor T. Sinclair, and Dr. D. Lawson (Banchory, N.B.).

Nov. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

A Case of "Hanche à Ressort."

AT the Academy of Medicine on Nov. 5th M. Nélaton read a note on a new method of treatment for the affection of the hip known as "hanche à ressort." This is a little-known condition which is sometimes so severe as to make walking very difficult, especially on going downstairs. A sharp pain is produced which is relieved when the patient remains still. The symptom depends on the internal rotation of the thigh and the operation consists of suppressing that movement by transplanting the tendon of the semitendinosus. There has been no relapse in the two years which have passed since the operation on a case under the care of M. Nélaton.

The Occasional Rheumatic Origin of Exophthalmic Goitre.

M. Vincent read a paper on this subject before the Biological Society on Oct. 26th. It is some time since he both maintained and proved that in the course of acute rheumatic fever the thyroid gland is often swollen and painful on pressure; this fact has led him to study the behaviour of the same gland after the rheumatism has been cured. As a rule, it speedily returns to its normal state but sometimes partial atrophy of the organ occurs and in these cases the rheumatism seems to become chronic. On the other hand, the enlargement of the thyroid body may persist after the rheumatism has cleared up. M. Vincent has had the opportunity of observing in a certain number of cases the evolution of a typical exophthalmic goitre in the course of a few weeks. This thyroid reaction may be met with in most of the infective disorders, but much less markedly than in acute rheumatism. In both cases the development of Basedow's disease has a similar explanation—namely, that it is an exophthalmic goitre of glandular origin and not like those cases of nervous origin which are due to functional disturbance or a lesion of he cervical sympathetic cord (*moelle allongée*).

The Development of the Volume of the Voice by Respiratory Exercises.

In a note communicated by M. d'Arsonval to the Institute Dr. Marage describes the methods of developing the volume of air which escapes from the lungs, the prime factor in developing the volume of the voice. For this purpose the thoracic capacity must first be increased. Town-bred children have narrow chests and most of them do not know how to breathe properly, the apices of their lungs do not expand, and are, of course, the first seat of tuberculous disease. Dr. Marage advises three exercises chosen from the repertoire of the gymnasium which, if repeated daily for ten minutes, are sufficient to bring the thoracic cage to its proper size in a few weeks. These exercises are very simple and can be learnt in a few minutes; they have the additional advantage of giving tone to the muscles of the abdominal wall; and they soon do away with the big ovoid belly which is so often seen in adults. The chest measurement and volume of air expired are recorded monthly and the exercises can be checked by the tables which have been drawn up of the relations which ought to exist between the height and the weight of the subject and the relations actually obtained. In this way the maximum of efficiency may be obtained.

Albuminuria in Morphinomaniacs.

The albuminuria which sometimes arises in the course of an attack of morphinomania is an indication of a weakened kidney, if not of an actually diseased one, and is a sign that total withdrawal of the drug must be hurried on. Albuminuria occurring during the course of weaning the patient from the drug constitutes a grave danger which demands the utmost care and watchfulness. It is characterised by its rapid evolution, the excessive amount of albumin, and a rapid increase in the amount of the same. Whether or not it has existed previously to the weaning from the drug having been begun it ordinarily disappears coincidently with the disappearance of the morphine intoxication, of which it is only an indirect complication. It is, in fact, not a morphine albuminuria. These statements were laid before the meeting of the Société de l'Internat des Hôpitaux de Paris on Oct. 24th by M. Sollier.

Disturbances at the Faculty of Medicine.

The Congress of Practitioners which was held in Paris during last spring passed a resolution that the professors at the Faculty of Medicine should be nominated only from among those who had no private practice (*qui n'exercent pas la olientèle médicale*) and who could therefore give their whole time to looking after the studies as well as the duties of the professorship. Accordingly when the two most recent vacancies occurred two very well-known men were nominated—namely, Professor Prenant of Nancy to the chair of histology in the room of Professor Mathias Duval, and Professor Nicolas, also of Nancy, to the chair of anatomy in the room of the late and much regretted Professor Poirier. These two nominations, however, although in conformity with an expressed wish, did not satisfy everyone, notably the *agrégés* of the Faculty, who objected to the nomination of two provincial men and who stirred up the students to protest. On Nov. 8th, which was the date fixed for the opening lecture by Professor Prenant, the students arrived in large numbers in the theatre and greeted the professor with yells, opprobrious epithets, and cat calls, despite the presence of the Dean of the Faculty, Professor Debove. All kinds of things were thrown at him, and finally one enthusiast threw a small bomb (*fusée*) which burst at the professor's feet. He and the dean then withdrew, finding it impossible to make themselves heard. The day following should have seen the opening lecture of Professor Nicolas and the students were warned against repeating their behaviour unless they wanted to see the Faculty closed. Nevertheless, much the same scenes occurred and the professor was greeted with showers of tomatoes and eggs which burst round him like shells, and he, too, retired without being able to make himself heard. The committee of the Faculty and the Dean have therefore decided to close the Faculty until Dec. 31st. Those students, however, who should complete their studies by Dec. 1st, and who if they fail to do so will have to complete another year's military service, will be admitted to examination.

Nov. 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The German Public Health Association.

THE German Public Health Association held its annual meeting recently in Bremen, Dr. Lentze, mayor of Magdeburg, being in the chair. Professor Flügge of Breslau

read a paper on the Spread of Cerebro spinal Meningitis and the Methods of Dealing with it. He mentioned the great epidemic in Upper Silesia, where in 1905 there were 500 deaths from the disease in a single town of 100,000 inhabitants. The epidemic had decreased since that time but still was far from being extinguished. Weichselbaum's meningococcus must be regarded as the cause of the disease as it was constantly present. Being very easily destroyed by drying it was only found in fresh discharges from the patient. Two distinct clinical conditions might be produced by the meningococcus—namely, either slight pharyngitis on the one hand or meningitis on the other. Children were specially liable to contract the disease. In patients suffering from pharyngeal infection the act of coughing caused the ejection of immense numbers of meningococci which invaded other people. In 70 per cent. of the members of the families of the patients meningococci proved to be present. Persons who harboured the meningococcus being at the same time in apparent good health were more dangerous as spreaders of the disease than patients suffering from obvious cerebro-spinal meningitis, because in the case of the latter the micro-organisms were inclosed in the meninges. Isolation of the patients had therefore been found quite useless as a preventive measure. From the point of view of prophylaxis it would be desirable to isolate the apparently healthy persons who were bearers of the meningococcus but this was impracticable. All attempts to destroy the meningococcus by antiseptic spray, or by brushing the pharynx with bactericidal preparations, or by the administration of pyocyanase have been failures. The method which offered the best promise of success consisted in instructing the public, and especially the families in which a case of cerebro-spinal meningitis had occurred, as to the proper means of dealing with nasal and pharyngeal discharges. In the discussion Dr. Bruns of Gelsenkirchen drew attention to the fact that previously to an outbreak of cerebro-spinal meningitis many healthy persons were found to be harbouring the meningococcus; during an epidemic the number of such persons was 10 or 20 times as great as the number of patients and their number decreased together with that of the patients. Professor Erismann of Zürich stated that in that city all the persons who had been in contact with a patient were isolated for a few days in a hospital. Dr. Kirchner, of the Prussian Government Medical Department, said that this proceeding was not in accordance with the German law and was also financially impracticable. If this were done in cerebro-spinal meningitis it must be equally done in connexion with enteric fever and other infectious diseases of bacterial origin. Dr. Tjaden of Bremen read a paper on the Necessity of Disinfection of Dwellings in which Infectious Diseases had Occurred. He said that the continuous disinfection during the course of the illness is preferable to the final disinfection. In cases of scarlet fever and of diphtheria a final disinfection is useless because the recovery does not coincide with the disappearance of the germs and because of the impossibility of ascertaining the proper time for the disinfection. In tuberculosis, however, where the germs were spread by the patient among his surroundings, a final disinfection was advisable. Professor Lenhartz of Hamburg spoke on the subject of Modern Hospitals and their Construction. He said that present-day views on hospital construction were undergoing a change. Since the "seventies" of last century the pavilion system has been most in favour, but hospitals of the smaller class are again being constructed on the corridor system, and large hospitals on a mixed system of two-storey pavilions and corridors. In Professor Lenhartz's opinion no hospital ought to contain more than 1500 beds. For certain diseases, such as those of the eyes, ears, and throat, for rheumatism, and for diseases of the kidney corridor hospitals were preferable to pavilion hospitals and they were also more easily managed and supervised. Hospitals consisting of one-storey pavilions were not advisable financially because of the expense; they should be the rule for infectious diseases only. The cost of building a modern hospital should not exceed 6000 marks (=£300) per bed. The charge under this head for the general hospital at Hamburg-Eppendorf was 5000 marks (=£250), and for the hospital in Nuremberg it was 4300 marks (=£215), while for the new Virchow Hospital in Berlin it was 8700 marks (=£435) per bed. Heavy initial outlay in this respect would naturally make municipalities chary of constructing new hospitals, and instead of displaying such lavishness in a single hospital it would be better to spend the money for two less luxurious but more hygienic institutions. The architect ought not to have everything his own way but he should take counsel with medical men. Professor Lenhartz's views were vigorously opposed by some of his audience who were connected with the Berlin hospitals and they were afterwards discussed in the Berlin press, both medical and non-medical. The Virchow Hospital, which was the special object of his attack, is considered as an institution of which the city of Berlin has a right to be proud; it was, moreover, during the late Congress of Hygiene and Demography admired for its architectural beauties and for its excellent equipment by the numerous members of the Congress who had the opportunity of visiting it. A paper on Garden Cities was read by Dr. Fuchs who made copious references to what had been done in England; and Dr. Mugdan read a paper on the Influence of Workmen's Sickness Insurance on Public Hygiene.

Puncture in Perityphlitic Suppuration.

At a recent meeting of the Hamburg Medical Society Professor Lenhartz read a paper on the Puncture of Perityphlitic Abscesses. He said that he did not make it a practice to incise every perityphlitic abscess, partly because of the danger of peritonitis which might occur in consequence of the breaking down of adhesions and partly because of the danger of abdominal hernia. During the last two years he had removed the pus by puncture in 60 cases with no death, whilst in 34 cases of early appendicectomy there were three deaths and in 54 cases of incision there were eight deaths. He used a glass syringe having a capacity of 10 cubic centimetres and provided with a cannula six or seven centimetres long; with this syringe from 10 to 240 cubic centimetres of fluid might be withdrawn and the procedure might be repeated when the fever again appeared. He showed temperature curves which proved that after puncture the temperature became normal at once; moreover, the swelling disappeared and the patient felt relieved. When cautiously performed with strict attention to antisepsis the operation was free from danger.

Poisoning by an Enema of Oil.

Dr. Buttersack of Heilbronn, writing to the *Deutsche Medizinische Wochenschrift*, reports a case of poisoning by an enema of oil. Sesame oil was prescribed and the bottle was so labelled, but subsequent chemical examination showed that the label was wrong and that the contents of the bottle were yellow liquid paraffin. The patient was a woman suffering from cholelithiasis who two and a half hours after the administration of the enema presented urgent symptoms of methæmoglobinæmia, such as vomiting, chocolate colour of the blood, cyanosis, cold perspiration, a pulse-rate of 120 associated with relatively slow respirations between 24 and 32 per minute, clonic convulsions, disturbance of the sensorium, and sopor. The urine which was discharged after ten hours contained renal casts and red blood corpuscles but no hæmoglobin, while that which was passed after 22 hours contained some albumin and a large quantity of hæmoglobin. From the third to the sixth hour after the administration of the enema a fatal issue was imminent, but by irrigation of the intestine and the inhalation of oxygen the patient's condition gradually improved. Similar cases have been described by Dr. Rautenberg. Subcutaneous injections of the oil from the bottle in quantities up to 50 cubic centimetres were fatal to cats, their blood assumed the typical chocolate-brown colour, and the spectroscopic analysis showed the characteristic lines of methæmoglobin. Dr. Buttersack said that such cases might be saved when an early diagnosis was made; this could be based upon the characteristic bluish-violet hue of the skin, and especially upon the examination of the chocolate- or sepia-coloured blood. The treatment should consist in removing the toxic oil by irrigation of the intestine, the administration of analeptics such as strophanthin, and the inhalation of oxygen. Previously to its administration the oil for the enema should be carefully examined.

Nov. 18th.

SCARLET FEVER IN A POLICE COURT.—At the Bristol police court on Nov. 4th a woman was summoned for neglecting her two children. A medical witness who examined the children during a short adjournment of the court caused some excitement by announcing that not only were the children neglected but that they were suffering from scarlet fever. The magistrate sentenced the woman to six weeks' imprisonment. The children were sent to the isolation hospital and will be subsequently admitted into the Barnardo homes.

COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

A New Diagnostic Method in Appendicitis.

Professor Thorkild Rovsing has been employing since 1904 an original and, as it appears, a very valuable method of examination in cases suspected of appendicitis or typhlitis. With his right hand he presses his left one, palm downwards, against the integument of the *left* iliac fossa and lets it glide upwards along the descending colon until it reaches the vicinity of the left colic flexure. By this procedure the gases contained in the large intestine are made to exert a greater pressure against the intestinal walls than before with the result of eliciting severe darting pains in the region of McBurney's point. In each of his two first cases in which he tried his new method of examination there was strong suspicion of the affection having a peri-typhlitis judging by the usual signs. The one patient, however, did not experience the least pain in spite of rather vigorous massage of the descending colon, while the other patient felt at once severe pain, referred to McBurney's point, after a mere compression of the middle part of the descending colon. The subsequent operations explained the difference. The last-mentioned patient turned out to be suffering from appendicular peritonitis, whereas the first patient on being explored by laparotomy did not present any alteration of the vermiform appendix or intestine but a retroperitoneal swelling which lifted up the ascending colon and which a lumbar incision proved to be due to a perirenal phlegmon. Judging from his experience in more than 100 patients, Professor Rovsing considers his method a trustworthy, sensitive, and valuable diagnostic help. Its importance lies in a twofold direction. First, it will aid in the correct diagnosis in the many doubtful cases in which the nature of a painful swelling in the right iliac fossa cannot with any certainty be made out, such as those in which the diagnosis of a renal affection, a ureteric or hepatic lithiasis, or a salpingitis appears just as probable as that of an appendicitis. For only in those cases where the pain is caused by an affection of the appendix or cæcum will it be elicited by pressure against the healthy descending colon. The trustworthiness of the symptom is well borne out by the following observation. In several cases of gangrenous appendicitis where the pain was referred only to the epigastric area and had therefore led to the suspicion of a gastric affection (perforating ulcer of the stomach), Professor Rovsing's method gave at once the correct diagnosis, pressure against the healthy descending colon immediately eliciting the typical pain over McBurney's point. The second field for application of the method is to be found in the acute cases where a direct palpation is dangerous, painful, or impossible on account of defensive muscular rigidity and therefore must be omitted, whilst the palpation of the healthy descending colon does not present any difficulty.

The Estimation of the Proteolytic Activity of Enzymes.

At the last meeting of the Biological Society of Copenhagen Professor S. P. L. Sörensen read a paper of exceptional interest and importance on the Estimation of Proteolytic Activity of Enzymes on a New Principle. The methods until now generally in use—e.g., the precipitation methods—were, he said, useful up to a certain point but they did not give full information, nor was it possible in following them to arrive at an absolute estimation of the proteolytic process. For instance, the method of tannic acid precipitation of the proteolytic products and the estimation of the amount of unprecipitated nitrogen as a measure of their proteolytic activity postulated that such activity stopped short at the limit represented by the tannic acid precipitation, a supposition which was, of course, not true. The proteolytic products escaping the precipitation might have been decomposed more or less extensively, and of the extent of such changes the usual methods gave no information; they also failed to indicate the decomposition which undoubtedly had taken place in the precipitated protein. Professor Sörensen's method is founded upon the universally accepted theory that the proteins are chiefly composed as anhydrides of different amino-acids, the COOH group of one acid forming an anhydride with the NH_2 group of another. Proteolytic enzymes act by breaking up these chemical bonds under addition of H_2O and setting free the acids. It is consequently possible to arrive at a true quantitative estimation of the proteolytic activity by a determination of the number of COOH groups set free. But before this can be done the NH_2 groups which are also liberated must be disposed of. For that purpose formic aldehyde (commercial formalin) is added to the solution of proteolytic products, with the result that the NH_2 groups are converted into methylene groups, NCH_2. For example, $CH_3 CHNH_2 COOH$ (alanin) + HCOH (formic aldehyde) = $CH_3 CHNCH_2 COOH$ (methylenalanin) + H_2O. In the formalin-treated amino-acids the COOH groups can, taking certain precautionary measures, be determined by titration, preferably with barium hydroxide. The choice of a proper indicator is here of the utmost importance. When a former investigator (Schiff) had to abandon the method as entirely untrustworthy the reason lay in his choice of an unfit indicator (litmus). Professor Sörensen had got the best results (above 98 per cent. of the theoretical value) by using a new indicator, thymolphthalein. In the course of the discussion which followed the paper Professor Johansen congratulated Professor Sörensen on his new method, which was perhaps destined to win the same important position in physiology as the method for nitrogen determination devised by Sörensen's predecessor, Kjeldahl.

The Histological Diagnosis of New Growths.

At the last meeting of the Medical Society of Copenhagen Professor Thorkild Rovsing opened a discussion on the trustworthiness of the histological diagnosis of new growths. In his opinion both practitioners and pathologists often trusted too much to microscopical diagnosis as an indication for operation. This obtained with reference to new growths of the epithelial as well as of the connective tissue type. As for the first, histological diagnosis was especially uncertain regarding papillomatous and villous tumours in the bladder and rectum. There were numerous examples on record in which the microscope proclaimed new growths to be benign, but the course of the disease proved them malignant. When examining masses removed by curettage from the interior of cavities lined with mucous membrane particular caution should obtain, as the tissues were distorted and faulty diagnosis in both directions was often the result. The usual explanation of such cases was that all the cancer tissue had been removed previously by the curette. But did not faulty microscopical diagnosis count for something also and were not more hysterectomies performed than were really needed? Another reason why microscopy might prove untrustworthy was that a tumour might be malignant in some places and benign in others, so that the piece submitted to the pathologist necessarily failed to give the information wanted. He himself had ten years ago demonstrated to that society the greater part of a stomach which he had removed because its macroscopic appearance at the operation led him to think it was sarcomatous, but the pathologist stated that the supposed sarcoma really was an ulcus tumour; several other pathologists on careful examination came to the same opinion, but finally, a quite circumscribed little adeno-carcinoma was found in the very midst of the tumour. How easily might not that little carcinoma have escaped detection! Still greater difficulties arose when the diagnosis stood between round-celled sarcoma and infectious or syphilitic granuloma. One of his patients suffered from a swelling of the thigh, which from its clinical aspect was diagnosed as an osteomyelitis. The surgeon who had then the case in hand made an incision but found no pus under the periosteum, only a soft tumour-like mass. The pathologist's verdict was undoubted round-celled sarcoma, and amputation was proposed, but the patient's father refused his consent. After three years, during which time the swelling increased slowly, the disease was recognised as an osteomyelitis with sequestration. In another case a sarcoma of the skull, microscopically verified, was cured in eight days by application of 2 per cent. nitrate of silver. For diseases of the bones, examination by means of the x rays seemed to be more trustworthy than microscopical examination with reference to the question as to whether they were benign or malignant. The practitioner ought always to send the patient's history to the pathologist, together with the excised piece of tumour tissue. Amputation, exarticulation, or resection of the larger bones for sarcoma must never be performed on microscopical evidence alone but only having due regard to the result of x ray examination and to the clinical history.

Nov. 18th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Post-Graduate Instruction.

THE Lombard School has taken an honourable lead in supplementing the qualifications of the graduate by special courses, dealing mainly with subjects not considered necessary by the aspirant to a degree. It was indeed at Pavia that one of its professors initiated what has now become the rule at other seats of learning—a series of lectures to Doctors of Medicine in branches of the profession, clinical and other, not included in the traditional curriculum; while at Milan an institution, set apart and equipped for these lectures, and recently opened, started on Nov. 15th on its "annus academicus." The Rector of the institute, the Senatore Luigi Mangiagalli, the worthy successor of Porro, delivered the inaugural address to a large audience which, besides the leading practitioners and consultants of the city and province, included many distinguished members of other professions and not a few ladies. His theme was the "Present and Future of Post-Graduate Instruction in Milan," and after reviewing the success of the "new departure" in professional qualification he settled down on a subject of growing interest, medical and social, throughout Italy—the "diseases incident to the agricultural labourer and the factory-hand." Again may Lombardy claim to have taken an honourable lead; and the veteran Milanese consultant, the Senatore Malachia De Cristoforis, received from the lecturer the meed of praise due to his crusade against such diseases, for the study and treatment of which an institution with a special clinique attached to it will shortly be opened. Subordinate institutions, cognate in character and all devoted to the instruction of practitioners in dealing with the "malattie del lavoro," will follow suit, institutions taking cognisance of such special subjects as ophthalmology, otology, and dentistry, the whole culminating in a hospital for chronic sufferers from the said "malattie," which in turn will serve the purpose of a clinical school. There could not be a better crown to the edifice of that "coltura superuniversitaria" (the higher university culture) in which Milan has come so effectively to the front.

The Pauper Lunatic.

This may be called a special victim to the exigencies and hardships of labour in the fields and of industrial occupation in the teeming centres; and, again, the Lombard capital takes an honourable part in the crusade of "prevention and cure." A report of the institution devoted to such cases in Milan lies before me, dealing with the last statistical year and showing the number of those cared for and relieved and the resources drawn upon to that end. Very gratifying to the patrons of the "Istituto pei Poveri Pazzi" (Institute for Pauper Lunatics) is Signor Pedetti's report and of the best augury for further exertions in the same direction. His appeal for further support is preceded by a powerful and pathetic description of the special subject of the charity as found in the rural districts and in the larger towns. A life of strain, of privation, of work excessive in amount and often insanitary in kind, has its nemesis in disease, which, particularly pellagra, is the direct cause of an enfeebled and a deranged mental condition. Such is the "portion" of the agricultural labourer. In the city, on the other hand, cerebral disorder is traced to the over-pressure (*surmenage*) besetting the whole industrial life, physical and intellectual, over-pressure which tempts the victim to seek solace in sensual indulgence, alcohol especially. To meet the wants of these cases, tending as they do to increase, the funds of the institution are strained to the utmost and after a selection has been made of the more urgent claimants, a large number of *recidivi* (relapsed cases) have to be left unprovided for, to fall back again into the slough of vice and its consequences. Signor Pedetti's appeal came at a time when the resources of the charitable have been drawn upon, if not wholly drained, by the earthquakes in Calabria and the floods in the neighbouring Venetia; but the "carità Milanese" has seldom proved unequal to the demands upon it, however exacting, and the report is even sanguine in its anticipation of the response which that "carità," justly called "smisurata e proverbiale" (unrestricted and proverbial), is already evoking.

Nov. 17th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

An Alleged Hospital Scandal.

AT the present day, when one of the chief ambitions of the Hungarians is to show to the world that their country is a cultured State in which science and industry are thriving, our national pride is deeply wounded when we read depreciatory remarks about ourselves in foreign newspapers. Fair criticism would not be objected to, but it is necessary to protest when sensational exaggerations are made the basis of a journalistic paragraph such as recently appeared in a London newspaper. This paragraph states that in the Szeged Municipal Hospital a flourishing trade has been carried on for years in corpses which were supplied to dealers in medical instruments, &c., for re-sale to students. This writer was evidently referring to the fact that several months ago certain allegations relative to the sale of corpses were fully discussed in the Hungarian newspapers, but these allegations were withdrawn after the holding of an inquiry which exonerated the officials employed in the mortuary of the hospital. The charges that were made seem to have had for their foundation the well-recognised practice of sending unclaimed bodies to the Anatomical Institutes.

The Sale of "Drug Specialities" and Secret Remedies.

Some account of the new Act relative to the sale of certain preparations in Hungary may be of interest to the readers of THE LANCET. Considerations of space permit reference to only the following selected paragraphs:—

3. The production of drug specialities is permitted only to pharmaceutical chemists.

4. Foreign drug specialities can be imported only by pharmaceutical chemists.

6. It is forbidden to place officinal drugs on the market as specialities under other names.

7. Anyone wishing either to manufacture or to place on the market a drug speciality must notify his intention to the Minister of the Public Health, who is in Hungary the Minister of Internal Affairs. He must at the same time submit a detailed thorough description of the drug in question, mentioning also its selling price, together with four original samples.

8. The manufacturing of the specialities can be begun only after the permission of the Minister has been obtained.

9. Specialities which contain drugs, marked in the Hungarian Pharmacopœia with one or two crosses (poisons such as chlorate of potash, arsenic, morphine, extract of belladonna, codeine, strychnine, &c.) can be sold only upon regular medical prescriptions. Specialities containing drugs marked with two crosses can be repeatedly sold only when the prescriber appends to his prescription "repetatur" or "reiteretur," signing the same with a new date.

10. The box or bottle containing every speciality must be labelled with the name of the producer, the name of the speciality, the quantity of the constituent parts, and the price of the drug. In corresponding cases also the following inscription is to be labelled: "Can be sold only upon medical prescription."

The direction for use may consist of the words "internally," "externally," "mouth-wash," "for inunction," or "for fomentations," but the giving of indications for the use of the remedy is strictly prohibited. In order that these regulations may be enforced the officials of the Board of Health are required to examine the chemists' shops and drug stores every month.

Nov. 18th.

Obituary.

ALEXANDER MACTIER PIRRIE, M.B., CH.B. EDIN.

A CAREER of great promise has been cut short by the untimely death of Dr. A. Mactier Pirrie. The son of the late Mr. Alexander Pirrie, C.E., he was born on Oct. 2nd, 1882. He obtained his B.Sc. with honours in anthropology at the University of Edinburgh in 1904, and qualified as M.B., Ch.B., in 1906. He obtained the Carnegie Research Fellowship in anthropology and was appointed anthropologist to the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. He went out to the Soudan in the autumn of 1906. Under the direction of Dr. Andrew Balfour, the director of the laboratories, Dr. Pirrie made his first expedition up the Nile to the southern limits of the Soudan and penetrated to remote parts of the Bahr-el-Ghazal. His second expedition took him to the borders of Abyssinia. On both occasions he passed through some of the most pestilential regions of Africa in connexion with certain anthropological and physiological researches appertaining to

tropical diseases upon which the laboratories are engaged. Unfortunately he contracted kala azar and was so prostrated as to be compelled to return to England, leaving Khartoum on June 17th last. He rallied from the effects of the fever from time to time but was compelled to enter Chalmers' Hospital, Edinburgh, in October where his case terminated fatally on Nov. 12th.

Dr. Pirrie presented a paper on his African expeditions at the last meeting of the British Association for the Advancement of Science but was prevented from being present on account of his illness. He brought back a most valuable collection of objects of scientific interest, and during the short spell of life remaining to him his interest never flagged in his work. At intervals during his illness he was engaged on his report to the Carnegie Institute and the Wellcome Research Laboratories, Khartoum, for which institutions he acted jointly in the important work he carried out in the Soudan.

He was interred at the Dean Cemetery, Edinburgh, on Nov. 15th. The Gordon Memorial College, Khartoum, Sir William Turner (Principal and Vice-Chancellor of the University of Edinburgh), Mr. Wellcome, and others were represented and sent wreaths. A resolution of sympathy has been conveyed to the relatives from the trustees of the Gordon Memorial College, and other expressions of sympathy have been received from the Liverpool School of Tropical Medicine and other bodies engaged in this school of research.

JOHN GARNER, L.R.C.P., L.R.C.S. EDIN., L.F.P.S. GLASG.

Mr. J. Garner, Inspector-in-Chief of the Egyptian Public Health Department, who died on Oct. 26th at Cairo, was a son of the late Dr. William Hastings Garner. After graduating in Arts at Trinity College, Dublin, he came to London and studied medicine at St. Thomas's Hospital. In 1894 he obtained the Scottish triple qualification and commenced his professional career as an assistant surgeon in the County Down Infirmary. Subsequently he returned to London and was for some time assistant medical officer of the North-Eastern Fever Hospital. As surgeon-in-charge to the Austin expedition for the delimitation of the Abyssinian frontier he became acquainted with Egypt. After the completion of his period of service with the expedition he returned to England and obtained a position in the Egyptian Public Health Service. He leaves a young widow to mourn her loss and his premature death will be deeply felt by a wide circle of friends.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Josef Gossmann, a much respected Munich obstetrician.—Dr. Caron, of the Havre Hospitals.—Dr. W. Nieberding, a Würzburg *privat-docent* of midwifery and gynæcology.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the quarterly meetings of the Royal Colleges of Physicians of London and Surgeons of England on Oct. 31st and Nov. 14th respectively diplomas of L.R.C.P. and M.R.C.S. were conferred upon the following gentlemen who have completed the final examination in medicine, surgery, and midwifery of the Conjoint Examining Board and have complied with the by-laws of the Colleges:—

William Seaforth Alderson, Sheffield and Leeds Universities; Matthew Thomas Ascough, Victoria University, Manchester; William Thomas Briscoe, B.A. Cantab., Cambridge University and King's College Hospital; Arthur Burrows, London Hospital; Martin Camacho, M.D. Paris, University of Paris and Charing Cross Hospital; James Robertson Campbell Canney, B.A. Cantab., Cambridge University and University College Hospital; James Aitken Clark, St. Thomas's Hospital; Robert Malcolm Coalbank, St. Bartholomew's Hospital; James Lyall Cock, M.D., C.M. Dalhousie, Dalhousie University and University College Hospital; Gilbert Golding Collet, B.A. Cantab., Cambridge University and St. George's Hospital; William Warner Cook Guy's Hospital; Robert Crawford, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Newton Charles Davis, St. Bartholomew's Hospital; Gerald Henry Davy, B.A. Cantab., Cambridge University and London Hospital; Eric Joseph de Verteuil, St. Bartholomew's Hospital; Reginald Lionel Ernest Downer, St. Bartholomew's Hospital; Gilbert Winter Dryland, Cambridge University and Guy's Hospital; Neville Avory Eddlestone, M.B., B.S. Durham, Durham University; Evan Parry Evans, Cardiff and London Hospital; Frederick Pearson Fisher, Birmingham University; Arthur Edwin Foerster, St. George's Hospital; Alexander Edward Gordon Fraser, St. Mary's Hospital; Thomas Rawdon Glynn, B.A. Cantab., Cambridge and Liverpool Universities; Philip Henry George Gosse, St. Bartholomew's Hospital; Morrice Greer, Liverpool University; John Edward Hailstone, M.A. Cantab., Cambridge University and St. Bartholomew's Hospital; John Patrick Hastings, M.B., B.Ch. New Zealand, New Zealand University and London Hospital; Henry John Henderson, Guy's Hospital; Ernest Bertram Hinde, B.A. Cantab., Cambridge University and Guy's Hospital; Frederick George Hitch, London Hospital; Emerson Le Roy Hodgins, M.B. Toronto University, Toronto University and Middlesex Hospital; Maurice James Holgate, St. Bartholomew's Hospital; Francis Harold Holl, Cambridge University and St. Thomas's Hospital; John Gladstone Ivers, Victoria University, Manchester; Reginald Jamison, M.A., M.B., B.Ch. Oxon., Oxford University and St. Bartholomew's Hospital*; Walter Marmaduke Jeffreys, B.A. Cantab., Cambridge University and University College Hospital; Robert Knowles, B.A. Cantab., Cambridge University and St. Mary's Hospital; Percy Lang, St. Bartholomew's Hospital; Arthur Norman Leeming, Guy's Hospital; Kenneth Arthur Lees, B.A. Cantab., Cambridge University and St. Mary's Hospital; William Hamer Leigh, Victoria University, Manchester; Robert McCheyne Linnell, B.A. Cantab., Cambridge University and London Hospital; Harold Norman Little, Cambridge University and St. Thomas's Hospital; Ernest Ward Lowry, St. Bartholomew's Hospital; Robert John Percival McCulloch, M.B. Toronto, Toronto University and London Hospital*; Jehangir Ardeshir Master, Bombay University and University College Hospital; William L'Estrange Mathews, Birmingham University; Max Herschel Edward Richard Montesole, St. Thomas's Hospital; Colonel Harry Montgomery, M.B. Toronto, Toronto University*; Benjamin Moore, Belfast and University College Hospital; Henley Hamlyn Moyle, Guy's Hospital; Austin Threlfall Nankivell, St. Bartholomew's Hospital; William Fulton Neil, M.B., Ch.B. New Zealand, New Zealand University and London Hospital; Donald North, Leeds University; Ernest Edwin Tallent Nuthall, St. Thomas's Hospital; Basil Henry Palmer, B.A. Cantab., Cambridge University and Guy's Hospital; John Parkinson, University College and London Hospitals; Dudley Garencières Pearson, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital*; Dallas Gordon Perry, M.D., C.M. Manitoba, Manitoba University and London Hospital; Charles Henry Lambert Petch, St. Thomas's Hospital; Alastair Gordon Peter, M.B., Ch.B. Aberdeen, Aberdeen University; Lionel Lewis Phillips, St. Bartholomew's Hospital; Montagu Phillips, B.A. Cantab., Cambridge and Liverpool University; Edward Selby Phipson, Birmingham University; Maurice Dyball Price, Guy's Hospital; Malcolm John Rattray, Guy's Hospital; Claude Mailinson Rigby, London Hospital; Cecil Frederick Robertson, Middlesex Hospital; Louis Philip Sanders, London Hospital; Ernest Albert Saunders, King's College Hospital; Stuart MacKenzie Saunders, Guy's Hospital; Gilbert Bodley Scott, St. Bartholomew's Hospital; Robert Beresford Seymour Sewell, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Francis Maylett Smith, St. Mary's Hospital; Philip Lechmere Stallard, Cambridge University and St. Thomas's Hospital; Richard Henry Easington Stevens, Middlesex and University College Hospitals; Kenneth Henry Stokes, University College Hospital; Henry Darby Thomas, Melbourne University and London Hospital; George Gilbert Timpson, L.D.S. Eng., Guy's Hospital; Sheo Nandon Tiwary, Agra Medical School and University College Hospital; Arthur John Turner, M.B., B.S. Durham, Durham University and London Hospital*; Garnet Wolsley Twigg, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Robert Wynne Stanley Walker, Cambridge University and University College Hospital; Gerald Douglas Hamilton Wallace, Charing Cross Hospital; Arthur Leslie Walters, St. Thomas's Hospital; Reginald Willan, Guy's Hospital; Richard Tudor Williams, St. Bartholomew's Hospital; George Ewart Wilson, M.B. Toronto, Toronto University and London Hospital; Arthur Lowndes Yates, St. Bartholomew's Hospital; and Ambrose Pode Yonge, B.A. Oxon., Oxford University and St. Thomas's Hospital.

* Diplomas of M.R.C.S. were conferred upon these gentlemen on Oct. 10th, 1907.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—At the First Professional Examination in Anatomy and Physiology for the diploma of Fellow, held recently, 109 candidates presented themselves, of whom 36 per cent. were approved and 64 per cent. were rejected. The following are the names of the successful candidates:—

Mukhtar Ahmed Ansari, B.A., M.B., Ch.B. Edin., Charing Cross Hospital and Edinburgh University; Harry Lawrence Attwater, B.A. Cantab., Cambridge University and Guy's Hospital; Noel William Berry, King's College and St. George's Hospitals; Kenneth James Charles Bradshaw, Liverpool University; Howard Buck, M.B., Ch.B. Vict., Victoria University, Manchester, and London Hospital; Alfred Joseph Clark, B.A. Cantab., Cambridge and St. Bartholomew's Hospital; Andrew John Crawford, L.R.C.P., M.R.C.S., M.B. New Zealand, New Zealand University and Middlesex Hospital; Gopal Vinayak Deshmukh, L.M. & S. Bombay, Bombay University and London Hospital; Arthur Oxley English, Middlesex Hospital; Harold Fearnley, M.B., Ch.B. Leeds, Leeds University; Claude Howard Stanley Frankau, L.R.C.P., M.R.C.S., St. George's, King's College, and University College Hospitals; Manchersha Dhanjibhai Dorabji Gilder, B.A., L.M. & S. Bombay, Bombay University and University College Hospital; George Munn Gray, M.B., Ch.B. Glasg., Glasgow University; Stanley Hoyte, King's College Hospital; Thomas Killen, B.A., M.B., B.Ch., B.A.O. R.U.I., Queen's College, Belfast; Murugesem Muthu Kumarasamy, Madras Medical College; Ernest Charles Lindsay, London Hospital; Arthur Gordon Haynes Lovell,

St Mary's Hospital; Adams Andrew McConnell, B.A. Trinity College, Trinity College, Dublin; Bernard Constable Maybury, St. Thomas's Hospital; Carlton Oldfield, M.D., B.S Lond., M.R.C.P., M.R.C.S., Leeds University; Laurence Christopher Panting, M.A., M.D., B.Ch. Oxon., Oxford University and Guy's Hospital; William Robert Parkinson, St. Thomas's Hospital; Wilfrid Langrish Pink, St. Thomas's Hospital; Arthur Borland Porteous, St. Mary's Hospital; Edward Holmes Rainey, London Hospital; Arthur Leyland Robinson, Liverpool University; John Godfrey Saver, Cambridge University and Guy's Hospital; Clement Edward Shattock, University College Hospital; Richard Lionel Spittel, L.M. & S. Ceylon, Ceylon and King's College Hospital; Charles Mon Stewart, M.D. Toronto, L.R.C.P., M.R.C.S., Toronto University and Middlesex Hospital; Thomas Duncan Macgregor Stout, Guy's Hospital; George Gushue Taylor, London Hospital; George Herbert Ussher, M.B., Ch.B. Edin., L.M. Dub., Edinburgh University and Middlesex Hospital; Philip Sexton Vickerman, M.B., Ch.B. Edin., Edinburgh University; John Murray Weddell, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Roger Parker Wilson, Captain I.M.S., L.R.C.P., M.R.C.S., D.P.H. Cantab., Liverpool University, St. Bartholomew's and King's College Hospitals; William Wilson, M.B., Ch.B., B.Sc. Vict., Victoria University, Manchester; and Albert Edward Mortimer Woolf, B.A. Cantab., Cambridge University and London Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—DENTAL EXAMINATION.—The following candidates have passed the necessary examination for the Licence in Dental Surgery:—

P. J. Bermingham, T. J. K. Bradley, C. J. Hyland, F. Lenihan, M. S. Philson, and R. P. Thomson.

The following have passed the primary part of the examination:—

W. Bennett, N. A. Clarke, C. A. Furness and L. P. Vernon.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berne:* Dr. Friedrich Lüscher, *privat-docent* of Otology and Laryngology, has been promoted to an Extraordinary Professorship.—*Copenhagen:* Dr. Axel Borgbjärg has been recognised as *privat docent* of Medicine and Dr. V. J. Harslöf as *privt-docent* of Surgery.—*Cracow:* Dr. Franz X. Lewkowicz has been appointed Extraordinary Professor of Children's Diseases and Dr. R. Nitsch has been recognised as *privat-docent* of Bacteriology.—*Gratz:* Dr. Franz Trauner of Vienna has been appointed Extraordinary Professor of Odontology.—*Greifswald:* Dr. Paul Römer of Würzburg has been appointed Professor of Ophthalmology in succession to Dr. Heine.—*Jena:* Dr. Theodor Meyer of Kiel has been recognised as *privat docent* of the History of Medicine.—*Kiel:* Dr. Helferich, Director of Surgical Clinic, is retiring on account of ill-health.—*Odessa:* Dr. Serapin of St. Petersburg has been appointed Extraordinary Professor of Surgical Pathology, and Dr. Walther, Extraordinary Professor of Medical Diagnosis, has been promoted to an Ordinary Professorship.—*Prague (German University):* Dr. Munzer and Dr. Pick, *privat docenten* of Medicine, Dr. Wälsch and Dr. Winternitz, *privat docenten* of Dermatology, and Dr. Lieblein, *privat-docent* of Surgery, have been granted the title of Extraordinary Professor.—*Tomsk:* Dr. S Timasheft has been appointed Extraordinary Professor of Children's Diseases.

HEALTH OF MAURITIUS.—The report of the Colonial Secretary of Mauritius on the blue book of that colony for 1906 has just been issued to members of both Houses of Parliament. It appears from the facts recorded that the population on Jan. 1st, 1906, was 377,532, of whom 282,572 were Indians. There were 12,669 births during the year, the birth-rate in the general population being 33·6 per 1000 and in the Indian 33·5. During the year 15,118 deaths occurred, the death-rate being 38·1 per 1000 in the general population and 40·8 in the Indian. The sanitary condition of the colony was, on the whole, slightly more satisfactory in 1906 than in the previous year. The total rainfall recorded for 1906 amounted to 41·66 inches, showing a reduction of 7·39 inches on the normal. This low rainfall, which was evenly distributed throughout the year, apparently helped in producing the amelioration noticed in the sanitary state of the island, especially as regards the prevalence of fever and dysentery. The number of admissions into the hospitals and asylums was 20,371 in 1906 against 20,735 in 1905. Malarial fever was responsible for 3674 admissions in the hospitals this figure being lower than that of the previous year by 1449. The number of patients, 794, who resorted to the hospitals on account of dysentery showed a considerable reduction, the total in the previous year having been 1013. Only six admissions for enteric fever were registered, but 75 other cases were notified from the different districts of the colony in compliance with the Contagious Diseases Ordinance. Influenza gave rise to 1768 admissions, showing an increase of 729 over the previous year. This disease prevailed in an epidemic character during the winter, and its incidence reached its acme in July, when 1023 cases were reported from the different district hospitals. Under the heading of tuberculosis 972 admissions were recorded in 1906, showing a decrease of 36 when compared with the figures of the previous year. Pertussis, which had only existed in a sporadic form during a number of years, occurred more frequently at the end of 1905, and assumed an epidemic character in 1906. The number of cases admitted into hospital was 169, of which five proved fatal, while the total number of deaths ascribed to the disease reached 216 during the year under review. The plague epidemic was more limited in 1906 than in previous years, 1905 excepted. The death-rate, though it showed a diminution on that recorded in 1905, reached the high figure of 79·3 per cent. during the year under review. The following table shows the yearly incidence of the disease since its appearance in 1899 as well as the deaths and death-rate:—

Year.	Cases.	Deaths.	Death-rate. Per cent.
1899	1416	1117	78·9
1900	796	593	74·5
1901	1093	805	73·6
1902	506	386	76·3
1903	1395	1035	74·2
1904	568	449	79·0
1905	308	251	81·5
1906	434	344	79·3

The campaign for the destruction of rats, which play such an important part in the dissemination of plague, was prosecuted with unabated vigour throughout the year 1906, 105,568 rats being destroyed by the official rat-catchers alone. Surra has existed throughout the year but to a lesser extent than during the previous one. A rapid decline in the epizootic took place after the month of March and the virulence of the disease appeared to be diminished.

LONDON SMOKE.—A conference on London Smoke and its Effects on Health was held at the Incorporated Institute of Hygiene on Nov. 18th under the presidency of Sir William Richmond. Sir William Richmond, in opening the proceedings, while disclaiming the right to speak from a medical point of view, dwelt on the aspects of the question from the position of the lay sufferer. A smoke-laden atmosphere, he said, was bad for the nervous system, for the eyes, the throat, and the lungs. "If," said he, "I go out into the open air on a morning when smoke fog prevails I become sick, subject to violent headache and giddiness, and am prevented from collecting my faculties, a general sense of weakness and inanition pervading my whole body." The effect of smoke fog on art, he said, was lamentable, a striking instance being the marbles in the British Museum, which were being slowly corroded and pulverised by the sulphuric acid in the air. Referring to the injurious effect of smoke on plant life in Kew Gardens, he incidentally mentioned that over an area of three-quarters of a mile of glass the weight of the smoke deposit was three tons. A discussion followed and a motion was adopted to the effect that coal smoke in the atmosphere was injurious to health, lowered vitality, and that every means should be adopted to find a remedy for it.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 6, Catherine-street, Strand, London, W.C., on Nov. 8th. There were present: Dr. F. de Havilland Hall (in the chair), Mr. J. Brindley James, Dr. H. A. Sansom, Dr. J. W. Hunt, Mr. F. S. Edwards, Dr. F. S. Palmer, Mr. Edward Bartlett, Dr. St. Clair B. Shadwell, Dr. M. Greenwood, Mr. Frederick Wallace, Dr. W. Knowsley Sibley, and Dr. J. B. Ball. The accounts presented showed that the business of the society continued in a very satisfactory condition. During the summer months the sickness claims have been somewhat in excess of the expectation, but during the month of October they have been both few in number and for the most part of short duration; and there is now little reason to doubt that as usual, the whole year's working will show a substantial margin in favour of the society. A small addition has been made to the list of those permanently incapacitated and so drawing what are practically life annuities, but not more than was expected from the growing number and increased age of the members. Prospectuses and all further particulars will be forwarded on application to Mr. F. Addiscott

secretary, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

Mr. T. A. Buck, M.B. Lond., of Ryde, has been appointed by the Secretary of State to be one of the medical referees under the Workmen's Compensation Act, 1906, for County-court Circuit No. 51 and to be attached more particularly to Portsmouth, Petersfield, Newport and Ryde, and Bishop's Waltham county courts.

A MEDALLION OF PASTEUR.—We have received, through the courtesy of M. Georges Dreyfus, from the pottery works at Moret (Seine-et-Marne), an excellent terra-cotta plaque representing the head and shoulders of the famous Louis Pasteur. The face is in profile and the modelling is in somewhat low relief, so that the correctness of the likeness is rather a triumph. As the medallions can be obtained, by addressing the director of the pottery works, at the modest price of 4*s.* 6*d.*, or 6*s.* in a neat frame, we think it likely that many of our readers may like to possess so artistic a memorial of a prince of science.

MEMORIAL TO THE LATE MR. W. S. BENNETT.—On Nov. 8th the Vicar of St. Paul's Church, Penzance, dedicated some choir stalls which have been erected in that church as a memorial to the late Mr. William Shepheard Bennett. The stalls are of oak, relieved with walnut, and affixed to them is a brass plate inscribed, "The oak choir stalls within the chancel were erected November 8th, 1907, in memory of the late W. S. Bennett, M.R.C.S., churchwarden 1874–1906." At the dedicatory service the vicar made an eulogistic reference to the devotion of his late warden.

ABERDEEN UNIVERSITY CLUB.—The forty-eighth half-yearly dinner of the Aberdeen University Club, the London outpost of the Aberdonians, was held on Wednesday night, Nov. 20th, at the New Gaiety Restaurant, under the chairmanship of Mr. W. Watson Cheyne. The medical profession present contributed largely to the success of an interesting dinner, for good speeches were heard from Sir Thomas Barlow, the principal guest, Dr. C. O. Hawthorne, and Dr. George Ogilvie, as well as from the chairman, while Mr. James Cantlie sang two Scottish ballads with a gusto that was fully appreciated by all present.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The Diploma of Fellow was, on Nov. 14th, conferred upon Lieutenant Robert Henry Bott, I.M.S., M.R.C.S. Eng., L.R.C.P. Lond., of St. Bartholomew's Hospital, who has now complied with the by-laws in regard to the Fellowship. Diplomas of M.R.C.S. were also conferred by the Council of the College upon Alfred Richardson, Leeds University; and Walter Woodworth White, M.A., M.D. McGill, L.R.C.P. & S. Edin., of McGill University. Licences to practise dentistry were conferred upon the following gentlemen who have now complied with the requirements for the Licence in Dental Surgery: Ernest William Cooke, Middlesex and National Dental Hospitals; and Duncan Baron Franks, Oxford University, Middlesex and National Dental Hospitals.

UNIVERSITY OF CAMBRIDGE.—Dr. J. N. Langley has been re-elected a manager of the Arnold Gerstenberg studentship.—Mr. Shipley of Christ College has been appointed a manager of the Quick Fund.—The following appointments have been made: University Lecturer in Experimental Psychology, Dr. C. S. Myers; University Lecturer in the Physiology of the Senses, Dr. W. H. R. Rivers.—The Walsingham medal for 1907 has been awarded to E. Mellanby, B.A., of Emmanuel College for his essay on "The Metabolism of Creatinin and Creatin."—The following degrees were conferred on Nov. 7th: M.B., B.C.: S. Churchill, Trinity; A. C. H. Sutro, Gonville and Caius; and J. T. Macnab, Christ's.—The Special Board for Biology and Geology announces that the Gedge prize will be offered for competition in the Michaelmas term, 1908, for original research in physiology.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, 25, Bedford-street, Covent Garden, London, W.C.

Obstetrics. A Text-book for the Use of Students and Practitioners. By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University; Obstetrician-in-Chief to the Johns Hopkins Hospital; Gynæcologist to the Union Protestant Infirmary, Baltimore, Md. Second enlarged and revised edition. Price 25*s.* net.

The Diseases of Infancy and Childhood. For the Use of Students and Practitioners of Medicine. By L. Emmett Holt, M.D., Sc.D., LL.D., Professor of Diseases of Children in the College of Physicians and Surgeons (Columbia University), New York; Attending Physician to the Babies' and Foundling Hospitals, New York. Fourth edition, revised and enlarged. Price 25*s.* net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

Handbook of Meat Inspection. By Dr. Robert Ostertag, Professor in the Veterinary High School at Berlin. Authorised translation by Earley Vernon Wilcox, M.A., Ph.D., Veterinary Editor, Experiment Station Record. With an Introduction by John R. Mohler, A.M., V.M.D., Chief of Pathological Division, United States Bureau of Animal Industry. Third edition. Price 31*s.* 6*d.* net.

BLACK, ADAM AND CHARLES, Soho-square, London, W.

Black's Medical Dictionary. Edited by John D. Comrie, M.A., B.Sc., M.B., F.R.C.P. Edin. Third edition. Price 7*s.* 6*d.* net.

C. V. MOSBY MEDICAL BOOK AND PUBLISHING CO., St. Louis.

The Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D., Clinical Professor of Gynecology, Washington University. Price not stated.

CHAPMAN AND HALL, LIMITED, London.

The Conquest of Cancer: A Plan of Campaign. Being an Account of the Principles and Practice Hitherto of the Treatment of Malignant Growths by Specific or Cancrotoxic Ferments. By C. W. Saleeby, M.D., F.R.S. Edin. Price not stated.

CHURCHILL, J. AND A., 7, Great Marlborough-street, London, W.

The Book of Prescriptions (Beasley). With an Index of Diseases and Remedies. Rewritten by E. W. Lucas, F.I.C., F.C.S., Pharmaceutical Chemist, late Examiner to the Pharmaceutical Society of Great Britain. With an Introduction by Arthur Latham, M.A., M.D., F.R.C.P., Physician at St. George's Hospital. Ninth edition. Price 6*s.* net.

CLARENDON PRESS, Oxford.

Studies in the Medicine of Ancient India. Part I. Osteology, or the Bones of the Human Body. By A. F. Rudolf Hoernle, C.I.E., Ph.D. (Tübingen), Hon. M.A. (Oxford), late Principal, Calcutta Madrasa. Price 10*s.* 6*d.*

HEINEMANN, WILLIAM, London. (G. P. PUTNAM'S SONS, New York.)

The Prolongation of Life: Optimistic Studies. By Élie Metchnikoff, Sub-Director of the Pasteur Institute. The English Translation edited by P. Chalmers Mitchell, M.A., D.Sc. Oxon., Hon. LL.D., F.R.S., Secretary of the Zoological Society of London. Price 12*s.* 6*d.* net.

KIMPTON, HENRY, 13, Furnival-street, Holborn, London, E.C. (STENHOUSE, ALEXANDER, 40 and 42, University-avenue, Glasgow.)

Practical Diagnosis: the Use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Sixth edition, revised and enlarged. Price 21*s.* net.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. For Students, Hospital Physicians, and Practitioners. By Charles E. Simon, B.A., M.D., Formerly of the Resident Staff of the Johns Hopkins Hospital; Professor of Clinical Pathology at the Baltimore Medical College; Clinical Microscopist to the Union Protestant Infirmary. Sixth edition, thoroughly revised. Price 21*s.* net.

LIBRAIRE KÜNDIG, Corraterie, 11, Genève. (ALCAN, FÉLIX, Boulevard Saint-Germain, 108 Paris.)

Le Ventre. Étude Anatomique et Clinique de la Cavité Abdominale au Point de Vue du Massage. II. L'Estomac et l'Intestin. Par Dr. F. Cautru et Dr. M. Bourcart. Price not stated.

STANFORD, EDWARD, 12, 13, & 14, Long-acre, London, W.C.

Handbook for Egypt and the Sudan. Edited by H. R. Hall, M.A., F.R.G.S., Assistant in the Department of Egyptian and Assyrian Antiquities, British Museum. Eleventh edition, revised, largely re-written, and augmented. Price 14*s.*

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London, E.C.

Calendar of the Royal College of Surgeons of England. August 1st 1907. Price 1*s.*

THE YEAR BOOK PUBLISHERS, 40, Dearborn-street, Chicago. (G. GILLIES AND CO., 28, Gibson-street, Hillhead, Glasgow.)

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D. Volume VI. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago; and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Series 1907. Price 5*s.* Vol. VII. Pediatrics. Edited by Isaac A. Abt, M.D., Assistant Professor of Medicine (Pediatrics Department), Rush Medical College. Orthopedic Surgery. Edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School, with the Collaboration of Gilbert M. Bailey, M.D., Instructor in Orthopedic Surgery, College of Physicians and Surgeons. Series 1907. Price 5*s.*

UNIVERSITY CORRESPONDENCE COLLEGE, London.

The London University Guide. 1908. Containing the Regulations for Examinations to be held in 1908 and 1909. Gratis.

W. B. SAUNDERS COMPANY, Philadelphia and London.

A Text-book of Physiology. For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Second edition, thoroughly revised. Price 18*s.* net.

A Text-book of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois.

(College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago. Second edition, thoroughly revised. Price 21s. net.

Surgery, its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume II. Price 30s. net.

The Operating Room and the Patient. By Russell S. Fowler, M.D., Professor of Surgery, Brooklyn Post-graduate Medical School; Chief Surgeon, First Division, German Hospital; Surgeon, Methodist-Episcopal Hospital, Brooklyn, New York. Second edition, revised and enlarged. Price 10s. net.

WILEY, JOHN, AND SONS, New York. (CHAPMAN AND HALL, LIMITED, London.)

A Text-book of Organic Chemistry. By A. F. Holleman, Ph.D., F.R.A. Amst., Professor Ordinarius in the University of Amsterdam. Translated from the Third Dutch Edition by A. Jamieson Walker, Ph D. Heidelberg, B.A., Head of the Department of Chemistry, Technical College, Derby, England; assisted by Owen E. Mott, Ph.D. (Heidelberg). With the Coöperation of the Author. Second English Edition, rewritten. First thousand. Price $2.50.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., London.)

Precious Stones: for Curative Wear; and other Remedial Uses: Likewise the Nobler Metals. By W. T. Fernie, M.D., Author of "Herbal Simples," &c. Price 6s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BENSON, A. H., M.B. Dub., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Cleobury Mortimer District of the county of Salop.

DUNNE, ARTHUR BRIGGS, M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., D.P.H. Lond., has been appointed Medical Examiner of Recruits at Nottingham.

FALCONER, A. D., M.D. Aberd., M.R.C.P. Lond., has been appointed House Physician at the Bristol Royal Infirmary.

FLETCHER, E. C., L.D.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London.

GARRAND, A. F., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Avonbridge District of the county of Stirling.

HIBBERT C., M.B., Ch.B. Vict., has been appointed House Surgeon at St. Mary's Hospital, Manchester.

JOSCELYNE, ARTHUR EDWIN, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Public Vaccinator for Taunton.

LACEY, FRANK HAMILTON, M.B., Ch.B. Vict., has been appointed House Surgeon at St. Mary's Hospital, Manchester.

LEMARCHAND, ARTHUR WHARTON, L.R.C.P. Lond., M.R.C.S., has been appointed by the Secretary of State for the Home Department as Medical Referee under the Compensation Act for the County Courts of Barnstaple, Bideford, Torrington, and South Molton.

MEADOWS, GEORGE STEPHEN, M.B., C.M. Edin., has been appointed Medical Officer of Health of Saltash (Cornwall).

OVERY, W., L.D.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London.

PITT, CHARLES WIGHTWICK, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health of Malmesbury (Wiltshire).

ROBSON, F., M.D. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Haywards Heath District of the county of Sussex.

SALTER, F. H., L.D.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London.

SHEPPARD, ARTHUR LEWIN, M.B., B.S. Durh., has been appointed Senior Resident Medical Officer at the Bristol Royal Infirmary.

WARD, A. J., L.D.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London.

WOOD, R. T., L.D.S. Eng., has been appointed House Surgeon at the Royal Dental Hospital of London.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BETHNAL GREEN BOARD OF GUARDIANS.—District Medical Officer. Salary £180 per annum.

BODMIN, CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £140 a year, rising to £160, with board, lodging, &c.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road.—Three Honorary Registrars, two Honorary Assistant Anæsthetists, and House Surgeon, non-resident. Salary 40 guineas a year.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Pathologist and Registrar. Salary £100.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Surgeon, also Assistant House Surgeon, for five months. Salary at rate of £80 and £70 per annum respectively, with board, residence, and washing.

GORDON HOSPITAL, Vauxhall Bridge-road, S.W.—Resident House Surgeon.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Junior Resident Medical Officer, unmarried, for six months. Salary £50 per annum, with full board.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence.

KENSINGTON GENERAL HOSPITAL, Earl's Court, London, S.W.—Junior Resident Medical Officer. Salary £40 per annum, with board, washing, and residence.

LAMBETH PARISH INFIRMARY, Brook-street, Kennington-road, S.E.—Fourth Assistant Medical Officer. Salary at rate of £100 per annum, with residential allowances.

LONDON COUNTY ASYLUM Long Grove, Epsom, Surrey.—Assistant Medical Officer. Salary £150 a year, with board, apartments, and washing.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department, Bowdon, Cheshire. Salary £100 per annum, with board, apartments, washing, and railway contract.

METROPOLITAN ASYLUMS BOARD (DARENTH ASYLUM, INDUSTRIAL COLONY, AND TRAINING SCHOOL).—Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £170, with rations, lodging, attendance, and washing.

MILROY LECTURES ON STATE MEDICINE AND PUBLIC HEALTH.—Lecturer for 1909.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Honorary Dental Surgeon.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary £80 per annum, with board, residence, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, with board, lodging washing, &c.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Bacteriologist. Salary at rate of £120 a year, with lunch.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board and washing.

ST. PANCRAS AND NORTHERN DISPENSARY, 128, Euston-road.—Resident Medical Officer. Salary £105, with residence and attendance.

SEAMEN'S HOSPITAL SOCIETY, Greenwich.—Medical Superintendent of the Dreadnought Hospital. Salary £200 per annum, with board. Also Surgical Registrar at the Dreadnought Hospital. Salary £50 per annum, with luncheon and tea.

SHANGHAI MUNICIPAL COUNCIL.—Assistant Medical Officer of Health. Salary £580 per annum, with quarters and allowances and free passage.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—House Surgeon, unmarried. Salary £60 per annum, with board and residence.

SOCIETY OF APOTHECARIES OF LONDON.—Gillson Scholarship in Pathology. Value £90.

WAKEFIELD, WEST RIDING ASYLUM.—Assistant Medical Officer. Salary £150, rising to £180, and upon promotion to £300, with apartments, board, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

WINCHESTER, ROYAL HANTS COUNTY HOSPITAL.—House Physician, unmarried. Salary £65, rising to £75, with board, residence, &c.

WINDSOR AND ETON ROYAL DISPENSARY AND INFIRMARY.—House Surgeon, unmarried. Salary £110 per annum, with residence, board, laundry, and attendance.

YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, S.W., gives notice o vacancies as Certifying Surgeons under the Factory and Workshop Act at Shrewsbury, in the county of Salop; and at Hertford, in the county of Hertford.

Births, Marriages, and Deaths.

BIRTHS.

COLLETT.—On Nov. 15th, at Hither Green-lane, S.E., the wife of Albert J. Collett, L.D.S. Eng., of a daughter.

SYMONS.—On Nov. 14th, at Officers' Quarters, Queen Alexandra Military Hospital, Milbank, S.W., the wife of Major F. A. Symons, R.A.M.C., of a daughter.

WISE.—On Nov. 14th, at Burrage-road, Woolwich, the wife of H. M. Wise, M.B., of a son.

MARRIAGES.

DENT—LEWIS.—On Nov. 15th, at St. Peter's Collegiate Church, Wolverhampton, Howard Henry Congreve Dent, F.R.C.S., to Olive Mary, daughter of Rowland W. Lewis, J.P., of Penn Croft, near Wolverhampton.

GIBBINS—DIX.—On Nov. 18th, at St. James's, Paddington, by the Rev. W. H. Gibbins, brother of the bridegroom, Kenneth Mayoh Gibbins, M.B., B.S. Lond., M.R.C.S., L.R.C.P., of Holmdale, Parkstone, Dorset, eldest son of B. T. Gibbins of Ilkley and Tunbridge Wells, to Anne Mary, daughter of the late Thomas Tucker Dix of Wells, Somerset.

DEATHS.

DAVIES.—At Cambridge, on Oct. 26th, Ernest Reuter John Wyatt Davies, M.A., youngest son of the late Herbert Davies, M.D., F.R.C.P., Consulting Physician to the London Hospital. R.I.P.

HARDEN.—On Nov. 15th, at St. Mawes, Cornwall, Edward Henry Thornbrough Harden, L.R.C.P. Lond., M.R.C.S. Eng., aged 45 years.

HARVEY.—On Nov. 12th, at Portsdown-road, W., Frederic Harvey, Fleet Surgeon, R.N. (retired), in his 89th year.

PATON.—On Nov. 16th, at Park House, Newport, Mon., from surgical septicæmia, Robert John Paton, M.D., C.M. Edin., Surgeon-Major 2nd V.B. S.W.B., Surgeon Newport and County Hospital, aged 45 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

SWIMMING IN WARM WATER.

To the Editors of THE LANCET.

SIRS,—Some little time back, in circumstances which are of no account, I had the uncommon experience of swimming in warm water for a few moments, and the effects were so remarkably beneficial, as compared to swimming in cold water, that the thought has occurred to me that it might be of great practical utility to suggest swimming in warm water under medical advice as a regular system of treatment. My own occupation is extremely sedentary. Hence my limbs, muscles, and internal organs get very set. I found that taking a few strokes in hot water had an entirely different effect to cold. Merely bathing in hot water in the ordinary way has nothing like the effect of the action of swimming in the warm fluid.

There are, perhaps, numbers of delicate young and middle-aged people (like myself) who cannot stand the shock of cold water (and to whom it is no good) who would derive great benefit and also a large amount of pleasure from such a form of exercise as I suggest. The dry air of the Turkish bath does not have the same effect, and the Russian vapour bath has certain drawbacks; and in neither of those does one get the beneficial physical exercise ensured by warm swimming. If bathers could not swim they would secure a good deal of benefit by moving about in the larger body of warm water. The circumscribed space of an ordinary bath somewhat minimises the beneficial effects of warm bathing on account of the enforced stillness and I have found that merely soaking is not nearly so satisfactory as moving about. My object in writing to you is that you may suggest the establishing of baths (12 feet ones would do) in existing establishments where a constant stream of warm water could be economically produced to pass through regularly. Some of the existing cold plunge-baths in Turkish and other baths could even be divided into two, one cold and the other warm, so that bathers could take their choice. Personally I never take the cold plunge because I cannot stand the shock and I have no doubt there are thousands like me.

I am, Sirs, yours faithfully,

South Tottenham, N., Nov. 12th, 1907. A LAYMAN.

FOLKLORE IN BRITISH INDIA.

COMMENTING on the "unrest" which in certain quarters is said to exist in India the *Statesman* adduces some rather remarkable instances of folklore which serve to indicate the undeveloped mental equipment of the masses in our great dependency. We are so frequently reminded, says our contemporary, that political discontent and agitation in India are confined to the very small minority of the population who have received an English education that some superficial observers are liable to imagine that the vast bulk of the people dwell in a condition of serene contentment, following their daily avocations with minds unexercised by any considerations other than those that bear a direct relation to the necessity of appeasing the physical pangs of hunger. How very far this is from being the case in reality everyone familiar with life in the Mofussil well knows. There is amongst the uneducated population of this country a strange susceptibility to panic which is apt to bring about disasters out of all proportion to their cause. The cause, in fact, is frequently non-existent: it is often purely imaginary. In some mysterious way rumours get set afloat and the more extravagant and grotesque they are the more readily they are believed. A well-known missionary in Chota Nagpur vouches for the authenticity of the following stories which are at present rife in his district and have given rise to an amazing sense of approaching calamity. If on a certain day a father should lay eyes on the face of his first-born son then assuredly that son would die. Thousands of fathers accordingly left their homes on the eve of the fateful day and remained absent till the morrow in order to circumvent fate. Another rumour which attained marvellous credence was to the effect that an enormous snake and a huge toad, borne respectively by 160 and 120 bearers, were on their way from the West. At every village the snake inquired whether any female resident had neglected to perform the ceremony of "Sahia." If such there was the toad breathed on her house and immediately all her children died. The ceremony here mentioned is the swearing of eternal friendship between two women who, strange to say, must be of different castes. They must also be mothers of exactly the same number of sons and daughters. In the first place there is an interchange of betel nuts. Then the women pay visits to each other's houses but must on no account see each other. Six months later they meet and exchange saris, and then each of the future inseparables eats food prepared by her sister. There are other forms which have to be complied with before the "Sahia" can be pronounced perfect. If either of the women fails to fulfil the whole ritual with the utmost exactitude, or tries to back out of the engagement once it has been started, she will either die herself or else entail that fate upon some beloved member of her family. The writer thinks that it is impossible to eliminate these superstitions and scares from the religious element which is so intimately bound up with the life of the people. In some cases a movement of this kind is deliberately religious, although it may be impossible to indicate the precise nature of the underlying motive. In conclusion, our contemporary relates another remarkable instance of the power of superstition. A short time ago a strange-looking parcel was brought to a native police station in a dooly. It was carefully wrapped up in many folds of cloth which was stained with the vermilion-coloured marks that are commonly impressed upon objects of worship. A quantity of rice and upwards of 60 rupees in silver were lying beside the parcel in the dooly. This mysterious package was said to have been carried through 40 villages before it reached its last resting-place, being treated everywhere with the utmost reverence. Happily, the officer in charge of the police station was a man of intelligence and initiative. The parcel had a very bad smell, so he caused it to be opened and found—a dead dog!

A DISCLAIMER.

To the Editors of THE LANCET.

SIRS,—My name appears in Bennett's Business Directory, 1907-08 (Somerset, Devon, and Cornwall), in spite of a request to their canvasser that it should not be inserted because of the purely business character of the publication, which consists largely of advertisements. Is there no redress? I am, Sirs, yours faithfully,

Doreen, Wellington, Somerset, Nov. 14th, 1907. WM. SPETTIGUE.

*** We sympathise with our correspondent, but it must be assumed that his name appears by error, the publishers not having received his instructions to omit his name.—ED. L.

WEIR *v.* FIELD: UNSOUND CONDENSED MILK.

AN action was recently brought in the City of London court in which the plaintiff, a merchant named Weir, sued Messrs. Field and Co., merchants dealing in tinned provisions, for damages for false representations concerning 69 cases of condensed milk. The plaintiff had bought the milk at 2*s.* 9*d.* per case of 48 tins, on the strength of a representation that it was good and sweet, but the whole of it had been condemned by the magistrate on the application of the sanitary authority, the plaintiff being fined £26 5*s.* with £5 5*s.* costs. It was stated that other milk of the same description, in the hands of various firms to the extent of over 2000 cases, had also had to be destroyed. The defence raised in the action by the wholesale vendors of the milk was that it was sold as food for pigs and that the price showed this, as the ordinary price at the time for sound milk was double that paid. The case was settled by the payment of £140 and costs. It would be of interest, in view of the defence raised being one frequently put forward, to know whether condensed milk, sound or unsound, is in fact used for feeding pigs and with what result. The price scarcely suggests a valuable article of diet for human beings or for animals.

HOT-WATER OPERATING TABLES.

To the Editors of THE LANCET.

SIRS,—As I consider I am entitled to claim priority for the above, having suggested the idea in the year 1889, I venture to ask if any of your readers who have performed operations on such tables will honour me by giving their opinion of its value in preventing shock during (or subsequent to) prolonged operations, especially abdominal? There has been ample time to judge of the practical use of such tables and as most instrument makers keep such in stock I may be excused for asking the opinion of operating surgeons as to its utility, &c. I am, Sirs, yours faithfully,

Nov. 18th, 1907. ALEXANDER DUKE.

A.—Our correspondent must consult a lawyer i he contemplates demanding a fee. The property in a prescription is a point of much difficulty. In this particular case the result would go, if litigation ensued, very much by the evidence as to exactly what was said and done at the meeting of the patient's father, the practitioner, and the consultant, while previous transactions between the father and the general practitioner would have to be considered. We do not advise our correspondent to go to law; anyhow he should not demand the suggested fee in such a way as to bring litigation about without first consulting a lawyer.

K. L. S.—Such cases are a little too frequent of occurrence for record in our columns.

W. J. G. S.—Will our correspondent who sent us four copies of the *Eastern Daily Express* kindly forward his name and address?

E. G, Belfast.—Our correspondent will find the information for which he asks at p. 1653 of THE LANCET of June 9th, 1906.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

During the week marked copies of the following newspapers have been received.—*North Mail (Newcastle), South Wales Daily News, Manchester Guardian, Daily Chronicle, Huddersfield Examiner, Sanitary Record, Laundry Journal, Birmingham Despatch, Standard, Yorkshire Daily Post, Newcastle Chronicle, Preston Guardian, Dublin Evening Telegraph, Liverpool Courier, Daily Telegraph, Pall Mall Gazette, Manchester Daily Guardian, Public Opinion Hereford Times, Yorkshire Daily Observer, Notts Evening News, Nottingham Press, &c.*

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (27th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30). P.M.

THURSDAY (28th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.).

FRIDAY (29th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golder-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (30th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (25th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M.: Council. 8.30 P.M.: Papers:—Dr. I. Bruce: Relation between Sciatica and Hip Joint Disease.—Mr. D. Fitzwilliams: The Pathology and Etiology of Intussusception in Children.

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M.: Cantor Lecture:—Mr. C. Beck: The Theory of the Microscope.

ROYAL SOCIETY OF MEDICINE (ODONTOLOGICAL SECTION) (20, Hanover-square, W.).—Casual Communication:—Mr. J. G. Turner: On the Effects of Chronic Suppuration of the Pulp in Molar of a Horse. Paper:—Mr. J. T. Carter: Some Notes on the Growth of the Jaws (illustrated by lantern slides).

TUESDAY (26th).—ROYAL SOCIETY OF MEDICINE (MEDICAL SECTION) (20, Hanover-square, W.).—5.30 P.M.: Paper:—Dr. A. R. Russell: On the Nature of Epilepsy.

ROYAL SOCIETY OF MEDICINE (THERAPEUTICAL AND PHARMACOLOGICAL SECTION) (Apothecaries Hall, Blackfriars, S.E.).—4.30 P.M.: Papers:—Mr. J. Cantlie: Some Tropical Diseases and the Remedies required for their Treatment and Prophylaxis.—Dr. W. Murray: Therapeutics of Indigestion.

THURSDAY (28th).—CHILD-STUDY SOCIETY (Parkes Museum, Margaret-street, W.).—8 P.M.: Lecture:—Dr. A. H. Hogarth: The School Clinic.

FRIDAY (29th).—SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Shaw Lecture:—Dr. J. S. Haldane: The Hygiene of Work in Compressed Air (Diving, Caisson Work, Sub-aqueous Tunnelling, &c.).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (25th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith road, W.).—12 noon: Lecture:—Dr. Low: Pathological Demonstration. 2 P.M.: Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Dr. Ball: Some Forms of Nasal Suppuration.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. G. Little: Clinique. (Skin.) 5.15 P.M.: Lecture:—Mr. V. Cargill: Corneal Ulcers.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—10 A.M.: Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie); 4.30 P.M.: Medical In-patient (Dr. A. J. Whiting).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Sir Dyce Duckworth: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. W. Turner: Surgery. 4 P.M.: Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations:—10 A.M. Surgical and Medical. 12 noon: Ear and Throat.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—9 A.M.: Operations. 2.30 P.M.: In-patients—Medical (Dr. Beevor); Out-patients—Medical (Dr. Willcox), Surgical (Mr. Low), Eye (Mr. Morton and Mr. Coates).

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Blastomycosis, Actinomycosis, Madura Foot, Glanders.

ROYAL DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY (Leicester-square, W.C.).—5.30 P.M.: Mr. J. F. Colyer: The Treatment of Superior Protrusion.

KING'S COLLEGE (UNIVERSITY OF LONDON) (Physiological Theatre, King's College, Strand, W.C.).—4.30 P.M.: Lecture:—Dr. O. Rosenheim: The Borderland of Animal and Vegetable Chemistry (Proteins, Lecithins, Pigments. &c.).

TUESDAY (26th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. M. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Ball: Some Forms of Nasal Suppuration.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. T. Williams: Clinique. (Medical.) 5.15 P.M.: Lecture: Dr. M. C. Hawkes: Swedish Medical Gymnastics, their Application in the Treatment of Spinal Curvature.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Clinique:—10.30 A.M.: Medical Out-patient (Dr. A. G. Auld). 2.30 P.M.: Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles). 4.30 P.M.: Lantern-Demonstration:—Dr. Chappel: Medical Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. T. Hewlett: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. Carless: Surgery. 4 P.M.: Mr. M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin. 2.15 P.M.: Special Lecture:—Dr. Hewlett: The Use of Sera and Vaccines in Medical Treatment.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Medical (Dr. Beale), Throat and Ear (Mr. Waggett); Out-patients—Surgical (Mr. Edmunds), Throat and Ear (Mr. French); Operations (Mr. Beale).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. Ormerod: Locomotor Ataxy.

WEDNESDAY (27th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of Eye. 2.30 P.M.: Operations. Dr. D. Robinson: Diseases of Women. 5 P.M.: Lecture:—Dr. Beddard: Practical Medicine.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. P. Paton: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. W. Milligan (Manchester): Some Practical Points in the Treatment of Suppurative Disease of the Nasal Accessory Sinuses.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—Cliniques:—2.30 P.M.: Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. F. Taylor: Medicine. 2.30 P.M.: Operations. 3.30 P.M.: Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Surgical (Mr. Stabb); Out-patients—Medical (Dr. Horder), Gynæcological (Dr. Lockyer), Skin (Dr. Whitfield), Teeth (Mr. Baly); Operations (Mr. Stabb).

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Blackfriars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Molluscum Contagiosum. Paget's Disease, Darier's Disease.

THURSDAY (28th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical

Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M.: Operations. 5 P.M.: Lecture:—Mr. Baldwin: Practical Surgery.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. P. Horrocks: Profuse Menstruation (with illustrative cases).

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—2.30 P.M.: Gynæcological Operations (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M.: Medical In-patient (Dr. G. P. Chappel). 4.30 P.M.: Lecture:—Dr. A. E. Giles: Ultimate Results of Inoperable Gynæcological Cases.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. G. Rankin: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Sir W. Bennett: Surgery. 4 P.M.: Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Ear and Throat. 3.15 P.M.: Special Lecture:—Sir William Bennett: Some Points relating to Dilatation of the Stomach.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—2.30 P.M.: In-patients—Medical (Dr. Morison).

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M.: Chesterfield Lecture:—Dr. M. Dockrell: Coccus Diseases: I., Impetigo Contagiosa; II., Furuncle; III., Carbuncle; IV., Coccogenic Sycosis.

CHARING CROSS HOSPITAL.—3 P.M.: Demonstration:—Dr. Galloway and Dr. MacLeod: Diseases of the Skin. 4 P.M.: Demonstration:—Dr. Routh: Gynæcological. (Post-Graduate Course.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M.: Lecture:—Dr. Thompson: Jaundice in Children.

HOSPITAL FOR NERVOUS DISEASES (Welbeck-street, W.).—5 P.M.: Lecture:—Dr. F. S. Palmer: The Differential Diagnosis of some of the more Common Types of Paralysis.

FRIDAY (29th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. M. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin. 5 P.M.: Lecture:—Dr. Robinson: On Gynæcology.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. E. Clarke: Clinique. (Eye.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Prince of Wales's General Hospital, Tottenham, N.).—10 A.M.: Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M.: Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M.: Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich).—2.15 P.M.: Dr. R. Bradford: Medicine. 2.30 P.M.: Operations. 3.15 P.M.: Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 12 noon: Skin.

GREAT NORTHERN CENTRAL HOSPITAL (Holloway-road, N.).—3 P.M.: Clinical Lecture:—Dr. S. Thompson: Rheumatoid Arthritis.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Mr. Ballance: Surgery of the Nervous System.

SATURDAY (30th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M.: Medical and Surgical Clinics. X Rays. Dr. K. Scott: Diseases of Eye. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE (Dreadnought Hospital, Greenwich.)—2.30 P.M.: Operations. Out-patient Demonstrations:—10 A.M.: Surgical and Medical. 11 A.M.: Eye.

HOSPITAL FOR DISEASES OF THE SKIN (52, Stamford-street, Black, friars, S.E.).—5 P.M.: Lecture:—Mr. T. J. P. Hartigan: Lupus Erythematosus, Sclerodermia, Vitiligo Alopecia Areata, Akrodermatitis Atrophicans.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 21st, 1907.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Nov. 15	30·19	N.W.	...	57	51	46	46	48	Overcast
,, 16	30·29	N.W.	...	53	47	37	36	37	Fine
,, 17	30·23	S.W.	...	60	52	37	47	50	Cloudy
,, 18	30·22	S.W.	0·3	51	51	44	49	49	Raining
,, 19	30·28	E.	0·50	55	50	47	47	48	Overcast
,, 20	30·21	N.E.	...	47	47	44	44	45	Overcast
,, 21	30·35	N.	...	51	45	42	41	43	Overcast

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